NEW SOUTH WALES

DEPARTMENT OF EDUCATION

COURSE OF INSTRUCTION
FOR
PRIMARY SCHOOLS

(ISSUED 1916)

1916.

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NEW SOUTH WALES.

DEPARTMENT OF EDUCATION.

SYLLABUS OF INSTRUCTION.

PREFACE.

THE school aims at giving to its pupils the moral and physical training and the mental equipment by which they may qualify themselves to meet the demands of adult life with respect to themselves, the family, society, and the State. By its influence upon character it should cultivate habits of thought and action that will contribute both to successful work and upright conduct, and, by the kind of instruction it imparts, it should prepare the pupils for taking up the practical duties of life and give them tastes and interests that will lead to activities beneficial both to themselves and to the community.

The school having thus a practical purpose to serve, the detailed subject-matter of school lessons should be so selected as to contribute most effectively within the limited period of school life to the training and equipment required. With regard to the material of instruction, the character of the teacher's lessons is determined, not by the quantity of the subject-matter that enters into his teaching, but by the fitness of the subject-matter for the powers and needs of the pupil, and the selection of it is regulated, not by what it is possible for the child to learn, but by what he most needs to know.

The Syllabus, besides providing a progressive course of instruction, is designed to give practical application in the teaching work of schools to the principle of the correlation of the subjects of study, to make "the self-activity of the pupil the basis of school instruction," to bring the work of the pupil into close touch with his home and social surroundings, and to make the school a powerful agent in the intellectual, moral, and social development of the child.

The school curriculum is not a collection of detached and independent subjects, but is made up of various related parts, dependent upon and contributary to one another. This correlation is provided for in the Syllabus, by grouping various related subjects as follows:—*English*—Correct speech, reading, writing, spelling, composition, recitation, grammar. *Mathematics*—Arithmetic, mensuration, algebra, geometry. *Nature Knowledge*—Geography, object lessons, elementery science. *Civics and Morals*—History, Scripture, moral duties, citizenship. *Art and Manual Work*—Drawing, brushwork, certain kindergarten exercises, modelling, woodwork, needlework. *Music and Physical Education.*

Not only are the subjects of one group related to one another, but those of one group are related to those of another. History and geography should contribute to one another; geography and mathematics, drawing and nature study, manual work and elementary science, should be made mutually helpful.

English is the basis of the curriculum. The teaching of English aims not merely at enabling a pupil to acquire the mechanical arts of reading and writing, but mainly at giving a command of the use of the mother-tongue as a means by which he gains access to the printed and written thoughts of others, and by which his own thoughts are expressed orally and in writing. It therefore, covers what has been embraced by the terms reading, writing, spelling, and composition, and this Syllabus requires that such a scope should be given to the treatment of these sections as to secure the aim above-mentioned. English, however, enters into the whole course of instruction. The proper treatment of every subject should demand from the pupils the clear expression of their thoughts, their knowledge being made definite and practically available by the statement of it in appropriate language.

In this connection, it is provided that, in addition to the School Magazine, the pupils should read approved books. These will enable the pupils to widen their range of interests, and, as the books chosen are such as deal with subjects suitable to the ages of the children, progress in the mechanical part of reading will be more rapid, and from the first the pupil will learn to look to books as a source of pleasure, thus laying the foundation of an appreciation of literature.

The Syllabus in mathematics deals with quantities, expressed by numbers, literal symbols, lines, and geometrical forms. From the earlier stages, the child is led to deal with quantities of actual things, and with the measurement of quantities, using various units—sticks, bundles, tens, dozens, feet, pence, ounces, &c. It is important that the youngest children should not only see but handle the quantities with which they deal, and actually make the measurements on which they are to operate. A valuable educational opportunity is lost if the pupil merely sees the teacher do what he should do for himself. It is here that a means is offered for directing and turning to useful purpose the self-activity of the child. Since, throughout the whole course, the exercises should be such as may naturally arise out of the pupil's experiences, it will be noted that the Syllabus requires the pupil to deal only with numbers that he can comprehend. It also requires that all mechanical processes of calculation should be treated as mere means to serve a real purpose; and further, that, as the methods employed in mental calculation and natural methods, mental work should be the basis of the instruction in this subject, written calculations being used merely as a supplementary aid or to give exercise in the expression of processes. It should be regarded as a matter of great importance that all mathematical work should be as accurate as the nature of the operations demands. Accuracy in dealing with numbers, in measurements, in the drawing of lines and geometrical forms, is essential to both the educative and practical purposes aimed at in the teaching of mathematics. The foundation on which the teacher works is the power of the child to learn from what he sees and handles, and by the use of what is called his common sense. In this treatment of mathematics, the boundary-lines between arithmetic, mensuration, algebra, and geometry cease to be clearly marked, and the principles which underlie the recent reform in the teaching of geometry should be also at the root of all the instruction in elementary mathematics.

In the portion of the Syllabus dealing with Nature knowledge the same fundamental principles should be kept in view, the making use of the child's activity by getting him to do and make things, the use of means to help him to form vivid mental images, and the encouragement of his interest in his surroundings. The child is in this course to be no mere passive recipient of information; he will acquire knowledge actively rather than receive it passively. The treatment of this branch of instruction will, therefore, make demands upon the resourcefulness of the teacher, in order that he may present it to his pupils in its many-sided aspects.

As Nature knowledge brings the child into contact with his natural surroundings, the instruction in civics and morals deals with his social environment. Moral obligations and the right relations of the individual to the family, to society, and to the State, are introduced by lessons in Scripture, in history, and on moral duties and civic institutions. In the treatment of English history the first aim will be to create an interest in the subject by introducing to the pupils some of the more picturesque incidents of early English history, following this by a treatment in story form of certain specified periods of national activity, whilst in the Sixth Class certain "history-wholes" will be dealt with in a more detailed way. Lessons on civic institutions, and the relations in which the individual citizen stands towards them, will call for very careful treatment. In a country with a comparatively brief history, the study of public institutions and civic obligations should form the foundation of a genuine patriotism. Such a study in its higher reaches is beyond the range of the primary school; its treatment, therefore, should be adapted to the stage of the mental growth of the child with regard to both the matter and method of instruction. The course, then, will begin with those institutions and functions of government of which the pupil's immediate surroundings will furnish concrete examples, and, as the details of instruction multiply, the tracing of the growth of public institutions will link the present with the past, and furnish the "alphabet to spell out the lessons of history." It is important that, as the pupils reach an age when they can appreciate the rights of citizenship, they should also, realise the duties which those rights involve.

Under the heading of Art and Manual work are embraced certain branches of instruction which should be incorporated in the school course when the necessary material for the purpose is available and the teacher possesses the necessary qualifications. The special aim of this course should be kept in view, in order that the teacher's work may be thorough and effective.

In schools under one teacher the pupils should be classified into two divisions. This arrangement will enable the teacher to concentrate his teaching, and thus make it more effective. Within these divisions there will be groups of pupils, corresponding to the classes in a larger school. These groups will work separately in such subjects as arithmetic and reading, but will combine for instruction in geography, history, etc.

The Syllabus for large completely organized schools provides a course of instruction for each year of the pupil's school life. An Infants' Department is regarded as the first and second classes of a school, and the course prescribed for an Infants' Department indicates the range of instruction for children up to the age of about 8 years, and will occupy two years, viz., from 6 to 8 years of age. It is considered desirable that, in dealing with pupils under 6 years of age, their occupations in school should be determined on kindergarten principles, and that, while instruction of a more formal character may be introduced after 6 years of age, the whole of the Infant course should be modified by and specially permeated with the spirit of the kindergarten methods.

The course of instruction for the whole of the Infants' Department being indicated, it remains for teachers in charge of these departments to divide this course into stages and periods to suit the particular circumstances of their schools with regard to the teaching staff and the number and classification of pupils.

In primary schools, with two or three teachers, where there cannot be a teacher for each class indicated in the Syllabus, the principal teacher is free to make such modifications as will admit of grouping classes in some subjects for collective teaching, provided that a continuity in the course of instruction is maintained, and each subject is treated with due regard to the essential principles underlying the Syllabus.

Courses of study are provided up to the Sixth Class, and, as is more fully shown in the explanatory notes, the limits of a distinctly primary course of instruction are determined by the proficiency required from pupils at the termination of the work prescribed for Sixth Class. The Seventh and Eighth Class pupils are considered as entering upon either higher primary or secondary courses. On reaching this stage pupils should be prepared to obtain a Qualifying Certificate indicating their fitness for more advanced instruction.

It should be clearly understood that this Syllabus is suggestive rather than specific. It is intended to indicate the scope of treatment, and to lay down fundamental principles and lines of direction at various stages of the pupil's progress; but it does not prescribe detailed methods for teaching individual subjects. For the general guidance of teachers typical courses are given in the notes following the various sections of the Syllabus.

The Syllabus being thus expressed in general terms, it is necessary, in order to provide for systematic teaching, that programmes of work for each half-year be constructed for each class, showing the division of the work into monthly periods and the specific lessons, under the various groups, proposed for each month. Lesson registers, posted up at the end of each week, should show clearly and fully the subject and scope of the lessons given to each class in each correlated group of studies.

The Principal Teacher or Mistress of Department should also examine each class in detail at least every quarter, and the results gained by each pupil in English and mathematics should be kept for the information of the Inspector.

P. BOARD,

Under Secretary and Director of Education.

4th January, 1916.

NOTE ON CLASSIFICATION OF PUPILS.

This Syllabus of Instruction provides for the completion of the primary course at the age of 12 years. For those who leave school at 14 or soon after—a great majority—this will allow two years for a further course which has been specially designed to meet their needs. If pupils remain in the primary classes till they are 13 or more, they will lose much of the benefit of the special course, or may miss it altogether. Though it is not expected that every pupil will keep up to the prescribed standard, the teacher should, by giving careful individual attention to slow or backward pupils make the exceptions as few as possible.

Promotions may be made yearly or half-yearly according to the judgment of the teacher. They should never be delayed on account of a forthcoming inspection. Pupils of special ability whose age and physique warrant the step should be moved up without waiting for the regular promotions. Backward pupils of advanced age should also receive favourable consideration in the same way.

Fitness for promotion will be determined by the Principal Teacher or Mistress of Department, on the basis of the class examinations, general observation of the pupil's capacity, and consultation with the class teachers. In this respect ability to read and understand and use English is to be the principal guide to the teacher.

In the case of transfer from Infants' to Primary Departments, the heads of Departments concerned should confer with a view to determine what pupils are to be transferred.

The ages of pupils specified in the syllabus are intended as a general guide to the standard of attainment that may be expected from normal children at various stages. They are not to be regarded as imposing on the teacher the obligation to place a child in a class for which he is manifestly unfit, simply on the ground that he has reached the age specified for the class.

In the early stages of the child's school attendance he will be placed in the First Class when he is fitted for it, but the age specified is to be regarded as a general guide to the teacher in this respect. It will, of course, be kept in mind that when promotions are made, children who are nearly 6 must receive special consideration. In fact, such children may be enrolled in First Class at any time. It is quite impossible to apply a hard and fast rule to children at this age.

In each class the Roll Book should now show the number of days the child has been present in that class; and where a child is more than six months in advance of the age prescribed for the quarter of the year a record should be made of what, in the teacher's opinion, is the cause of backwardness. The teacher, however, is not to assume that such cases should not occur, for a variety of circumstances will contribute to produce them.

In the whole matter of classification of pupils it should be understood that the interests of the pupils supersede any prescribed rules as to age, the teacher at the same time so far studying his pupils as to be able to give reasons for any divergence from the normal standard in individual cases.

GENERAL NOTES ON THE SYLLABUS.

THE PRIMARY COURSE.

The Limits of the Primary Course.

A large number of the pupils will not reach a standard beyond that of the Sixth Class. The work of this class should therefore round off a distinct stage in the primary course. Upon the completion of it, the pupil should be able to read ordinary English intelligently, make use of his ability to read in further extending his knowledge, express himself in clear and correct language, carry out the most common calculations of trade and business, have a general knowledge of the surface of the earth, some elementary natural phenomena, and the main features of the history of England and Australia, have acquired a degree of skill of hand that will assist him in the use of tools, and a training in moral and civic duties that will form a basis for future citizenship. In girls' schools the course will have been modified to admit of the acquirement of knowledge and skill that will afterwards be useful in domestic and family pursuits.

Post Primary Courses.

The satisfactory completion of the Sixth Class work will be followed by an examination for the *Qualifying Certificate.* The gaining of this certificate is a condition necessary to entry upon higher instruction either in High Schools (for those who intend to remain at school for four years longer), or in Superior Public (Day Continuation) Schools (for those who will leave school at 15 or 16 years of age). In places where there are neither High Schools nor Day Continuation Schools, pupils who remain at school after gaining the Qualifying Certificate should take up the work laid down in this syllabus for Seventh and Eighth Classes.

It is recognized that the work set down in the Syllabus for Seventh and Eighth Classes will not meet the needs of many Superior Public Schools situated in country towns. So varied are these needs that a Syllabus suited for one locality may be quite unsuitable for another. Each school will really require separate consideration. A Principal Teacher who considers that the requirements of his locality will best be met by the adoption of a "Composite" Course of Instruction for the Seventh and Eighth Classes should compile such a course from the Department's Syllabuses for Junior Technical, Commercial and Domestic Schools. Before adopting this Composite Course, it should be submitted to the Chief Inspector for his approval.

ORGANIZATION.

What it comprises.

The organization of a school, as far as it is in the hands of the teacher, is mainly concerned with the distribution of the school time as shown by the time-table, the detailed schemes of instruction as indicated in the programmes, the classification of the pupils, and the mechanical arrangements for facilitating the operations of the school, and for aiding the work of instruction.

In schools under one teacher, the main difficulty that presents itself, is that of providing for the continuous and profitable employment of all the pupils during the whole of the school time.

To meet this difficulty it will be necessary to divide the primary school period of six years into two three-year periods, the lower division to contain pupils of the first, second, and third years, and the upper division pupils of the fourth, fifth, and sixth years.

The time-table should be so arranged that each section may get its share of the teacher's direct attention in both reading and arithmetic, while at the same time the other sections and their divisions are profitably employed in silent work. The silent work will embrace writing, arithmetic, silent reading, composition, transcription, drawing, and (in upper division) map-making.

The previous preparation by the teacher, of the day's lessons and the preliminary laying out of material so that it may be readily obtainable, will contribute to economy of time, and the smooth working of the school.

Both divisions of the school may be combined for observation and picture talks, moral stories, and daily physical exercises, these being treated in lessons of about ten minutes each. In these, as well as the combined lessons on Nature Knowledge, Scripture, Singing, History, &c., the teacher needs to adapt the lessons at various points to the powers of the various sections of his school.

The work will be so arranged that whilst pupils will not cover the work in the order set down year by year in the syllabus, they shall cover within each triennial period the whole of the work set down for the three years, the combination of classes making it possible to provide fresh subject-matter all the time, for each portion of the combined class. As an example, take the subject Nature Study. All the pupils of the upper division will be grouped together for this lesson. Then for one year they will study those topics which are set down in the syllabus for Class 4. The following year they will all take the topics set down for Class 5 and again, next year, they will all study the subjects prescribed for Class 6. Thus, within the triennial period, all the work set down for Classes 4, 5 and 6 will be covered, though not perhaps in the same order as in large schools where there are separate classes corresponding with each school year.

And so with similar subjects, both in lower and upper division.

But such modifications of this scheme should be made as will provide that pupils during their last year of primary work will study those portions of English, Mathematics, History and Geography which are set down in the syllabus for Sixth Class.

Senior Pupils may Study from Text-books.

A difficulty is met in some schools under one teacher where there are in the Upper Division some pupils who have reached a standard beyond the majority of that division. To meet the case of such pupils without taking the teacher away unduly from the rest of his school, they should be allowed to study from books in those subjects in which they are too far advanced to make their working with the others profitable. The teacher should, however, see that the study of these text-books is not mere memorizing, but that the sense of what is read is intelligently grasped. The systematic making of notes of what is read will be found useful, the notes afterwards forming the material on which a composition exercise is based.

Promotion to Upper Division.

The promotion of pupils from the Lower to the Upper Division will take place when the course for the Third Class has been covered, but it is not expedient to make promotions more than once a year. As a rule, the pupil who enters school at 6 years of age should be prepared to enter the Upper Division at between 9 and 10 years of age.

Classification in Schools with more than one Teacher.

In all except the very large schools, the making of promotions from class to class once a year will best enable the teacher to maintain a fairly uniform standard of attainments in each class. As in many of these schools it is found necessary for the teacher to have charge of more than one class, combinations of two classes may be made for lessons in Nature Knowledge, History, Morals, and Civics, by such an arrangement of each year's course as will provide fresh subject-matter for both portions of the combined classes. The total number of pupils in combined classes should not, as a rule, exceed fifty, except for such a subject as Singing. When, as in the case of small schools, there are a few pupils who have passed beyond the highest class of the school, the use of approved text-books should be introduced, so that these pupils may study from them under the teacher's guidance, but without taking up more of his time than he can fairly spare from the rest of his school.

Programmes of Lessons: Their Object.

In the construction of programmes of lessons it should be kept in view that the purpose of these documents is to provide a methodically arranged and graded course of lessons for a definite period, so that fresh subject-matter may be introduced in proper order, and the course of instruction be systematically progressive. In making the programmes the requirements of the Syllabus indicate the scope of the work for each class or division of this school. This work needs to be distributed over successive periods of time in order of difficulty or development. The class programmes should be made out for periods of six months (divided into monthly sections), and all programmes should be carefully preserved in the school, for the Inspector's information, for a period of at least two years from the date of their compilation.

Programmes of Lessons: Their Scope and Limitations.

Where a year's work is shown in the Syllabus, it should be divided equally between the two half-years, the more advanced portion being dealt with in the second half-year. As the programme is a guide to the teacher mainly with regard to the arrangement of fresh subject-matter in his course of lessons, it is not necessary to indicate in it any methods of teaching or any directions of a general character which are already given in the Syllabus and are applicable, not to particular lessons, but to all lessons given in one subject. For example, in connection with reading, the oral expression of the subject-matter is a feature that should enter into all reading lessons, and the statement of it in the programme is not necessary, the function of the programme being to supply *details* of work for each month. The programme in English in Third Class, for instance, would show for each month, in addition to the reading of the School Magazine, the supplementary reading for the month, the special points in spelling and word-building to receive attention, the special feature in sentence construction and the functions of words to be treated, and the portion of the graded course in writing. In Mathematics would be shown the new features to be treated in oral work and in written work, in Arithmetic, and the fresh work to be done with the use of instruments. The programme in Nature Knowledge would show the definite subjects for the lessons under this head for the month. The Syllabus and the programmes together will thus guide and systematize the instruction, the former supplying tke general directions to be observed, and the latter the details of monthly work. These details should be stated in as concise a form as possible. The programmes should also make provision for systematic periodical revision.

The Lesson Registers and Inspection.

The Lesson Register should show the specific lessons and the scope of the instruction given in each subject in each week, to each class and section of class in the school. The examination made at the annual inspection of the school will be based upon the subject-matter so indicated.

The Time Table.

The following is an approximate distribution of time in hours per week for schools with more than one teacher :—

Classes ...	1	2	3	4	5	6
English	9½	10	8½	8½	7	7
Mathematics	5	5	6	6	6	6
Nature Knowledge ...	2	2	2½	2½	2½	2½
Morals and Civics ...	1½	1½	1½	1½	2¼	2¼
*Art and Manual Work ...	3	3	3	3	3	3
Music	1½	1	1	1	1	1
Physical Training ...	1¼	1¼	1¼	1¼	2	2
	23¾	23¾	23¾	23¾	23¾	23¾

* Art will occupy about 1¼ hours per week and Manual Work about 1¾ hours.

Note.

1. The above distribution of time is intended to serve as a general guide to the teacher to indicate the relative proportion of school time to be devoted to the various branches of study. It cannot be rigidly adhered to in all schools, and may, therefore, receive such modifications as the circumstances of each school require, a general approximation to this allocation of time being observed.

2. When the school receives visits from clergymen, for the purpose of special religious instruction, the amount of school time to be devoted to secular instruction should be correspondingly reduced.

3. A similar modification will be required in the case of girls who in all classes, except first and second, are required to devote two hours per week to Needlework.

ENGLISH.

First Class—Ages 6 to 7 years.

Reading.—Script words in phonics and sight words leading up to the reading of Primer I.; Primers I. and II.; reading sentences composed by the teacher from words used in Primers I. and II.; short sentences from the pupils' conversation during "talks" and from their rhymes and stories; further supplementary reading from slips and cards.

Learning nursery rhymes and jingles.

Expression.—(a) 1. Encouragement of free conversation between teacher and children. Morning and observation talks on the children's experiences. Talks upon pictures and blackboard sketches.

2. Reproduction of stories by means of a series of pictures, the use of the sand tray, or by dramatization.

3. Children's talks in connection with their free drawing and modelling.

(b) Correction of errors in the ordinary speech of the children.✱

Spelling.—Words treated in the phonics lessons, and common sight words. Transcription.✱

Writing.—

Second Class—Ages 7 to 8 years.

Reading.—Reader I., Parts I. and II.; also approved story books; selected fairy tales, poems and nursery rhymes. Free choice reading,✱ from readers and class library.

Learning poems, single stanzas, detached couplets and single lines. (Individual recitation.)

Oral expression.—(a) Observation talks and picture talks, the former on topics from the children's experiences, the latter on pictures and blackboard sketches drawn before the class, encouraging free talk between teacher and children.

(b) Reproduction of stories by means of a series of pictures, the use of the sand tray, or by dramatization.

(c) Children's talks in connection with their free drawing and modelling.

(d) Phonic exercises.✱

(e) Exercises to correct common errors in the children's speech.✱

✱*Written expression.*—(a) Free composition on toys, pets, actions, games plays, excursions, from oral stories, &c.

(b) Writing single sentences in correct form.

✱ See Notes.

Spelling.—(a) From the Syllabus list.*
(b) From the class list.*
(c) Word building and word grouping.*
(d) Transcription.*
(e) Dictation tests on (a) and (b).

Writing.—In double-ruled books, with pencil, letter formations and simple combinations. (Towards the end of the year pen and ink should be introduced.)

Third Class—Ages 8 to 9 years.

Reading.—School Magazine and approved story books.
Silent reading. Free choice reading.* Reading of suitable poems and stories by the teacher for short periods.*

Learning poems, single stanzas, detached couplets and single lines (Individual recitation.)

Oral Expression.—(a) Short talks as in 1st and 2nd classes.
(b) Oral expression of the subject-matter of reading and other lessons.
(c) Practice in continuous oral expression.
(d) Correct pronunciation, accurate use of words and sentences, completeness of thought expression.
(e) Phonic exercises to secure improved speech.*

**Written Expression.*—(a) Free composition on topics which appeal specially to the direct interest of the children.
(b) Lessons in the composition of short sentences on a single topic.
(c) Exercises to correct common errors in the children's speech.*

Spelling.—(a) From the Syllabus list.*
(b) From the class list.*
(c) Word building and word grouping.*
(d) Transcription.*
(e) Dictation tests on (a) and (b).

Writing.—In double-ruled books with pen and ink. Simple copies to accord with scheme outlined in notes, as: in, min, mam, mum. Exercises in correct slope. Practice with capital letters.

Fourth Class—Ages 9 to 10 years.

Reading.—School Magazine and approved books.
Silent reading. Free choice reading.*
Reading by the teacher, for short periods, of suitable poems and stories.*

Learning poems, single stanzas, detached couplets, single lines. (Individual recitation.)

Oral Expression.—(a) Oral expression by the children of the subject matter of reading and other lessons.
(b) Practice in continuous statement.
(c) Accurate use of words and sentences, and completeness of thought expression.
(d) Phonic exercises to secure improved speech.*

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* See Notes.

**Written Expression.*—(a) Free narrative composition.
(b) Personal letters.
(c) 1. Fitting together of the elements of the simple sentence, *e.g.*, subjects to predicates, predicates to subjects.
2. Conversion of simple sentences from singular to plural form.
3. The use of capital letters, full-stops, question marks, apostrophe.
4. Expanding sentences by the use of adjectives and adverbs.
5. How to quote dates, names of months, &c.
6. A few of the commonest abbreviations, *e.g.*, Mr., Dr., St., M A., LL.D., Hon., &c.

Spelling.—(a) From the Syllabus list.*
(b) From the class list.*
(c) Word building and word grouping.*
(d) Dictation tests on (a) and (b).

Writing.—In singled-ruled books, more difficult copies than in Class III. *e.g.*, minim, mamma, murmur. Exercises for correct slope, height, and junctions. Letter drill on letters as f—muff, ruff, fluffy.

Fifth Class—Ages 10 to 11 years.

Reading.—School Magazine and approved books.
Silent reading.
Free choice reading *
Reading by the teacher for short periods.*

Learning poems, single stanzas, detached couplets and single lines , also proverbs and notable sayings.

Oral Expression.—(a) Oral expression by the children of the subject matter of reading and other lessons.
(b) Practice in continuous statement.
(c) Accurate use of words and sentences, and completeness of thought expression.
(d) Phonic exercises to secure improved speech.

**Written Expression.*—(a) Free composition to include reproduction and imaginative work, and short descriptions of matters within the children's experience.
(b) Personal letters—with attention to form.
(c) 1. Recasting sentences to give fresh forms while preserving the sense.*
2. Changing the form of sentences to express present, past, and future time.
3. Construction of interrogative sentences.
4. Simpler uses of the comma.*

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* See Notes.

Spelling.—(a) From the Syllabus list.✱
(b) From the class list.✱
(c) Word building and word grouping.✱
(d) Dictation tests—passages based on (a) and (b).

Grammar.—(a) Division of the simple sentence into subject and predicate.
(b) Functions of verb, noun, pronoun, adjective, and adverb.

Writing.—In single-ruled books—more difficult copies as: minimum, murmuring, maxim, maximum. Letter drill. Combinations of letters. Exercises for slope, height, and junctions.

Sixth Class—Ages 11 to 12 years.

Reading.—School Magazine and approved books.
Study and appreciation of poems.
Free choice Reading.✱
Use of books of reference.
Dictionary practice in finding correct pronunciation.

Learning poems, single stanzas, detached couplets, single lines; also proverbs, notable sayings, and choice prose passages.

Oral Expression.—(a) Accurate use of words and sentences, and completeness of thought expression.
(b) Class discussions.✱
(c) Assignment to selected pupils of topics in literature, history, geography, &c., to give exercise in collecting information and reporting it orally to the class.

✱*Written Expression.*—(a) Fuller development of the free composition specified for Class V. Practice in written expression of the ideas gained in ordinary class work.
(b) Private letters; increased attention to form.
(c) Practice in changing from direct to indirect speech.
(d) Paragraph construction.
(e) Working up of notes into paragraphs.
(f) Recasting sentences to give fresh forms while preserving the sense.
(g) Use of quotation marks and note of exclamation.

Spelling.—(a) From the Syllabus list.✱
(b) From the class list.✱
(c) Word building and word grouping.✱
(d) Dictation tests—passages based on (a) and (b).

✱ See Notes.

Grammar.—(a) Analysis of sentences into clauses, subjects, and predicates.
(b) Kinds of clauses and their relationships.
(c) Accidence of noun and pronoun and of verb, omitting mood.
(d) Functions of all the words in a sentence.
(e) Relation of noun, pronoun, and verb in sentence construction.

Writing.—Speed exercises, with special attention to legibility in all written work.

Seventh and Eighth Classes—Ages 12 to 14 years.

Reading.—Authorized Books, Magazines, and Newspapers, * short interesting biographies of Shakespeare, Milton, Bunyan, De Foe, Addison, Goldsmith, Dr. Johnson, Burns, Scott, Wordsworth, Browning, Tennyson, and leading Australian writers.

Encouragement of home reading.

Learning of appropriate selections, both prose and verse.

Practice in the use of dictionary, year book, atlas, encyclopædia, &c.

* *Oral Expression.*—(a) Class discussion.
(b) Assignment to selected pupils of topics in literature, history, geography, etc., to give exercise in collecting information and in reporting it orally to the class.
(c) Debates on subjects coming within the pupils' experience and understanding.
(d) Current topics.

* *Written Expression.*—(a) Written composition mainly on topics associated with the literature course and other subjects within the pupils' experience.
(b) Letter writing (personal and business).
(c) Recasting sentences to give fresh forms while preserving the sense; clearing sentences of ambiguity; changing from direct to indirect speech and the reverse; securing emphasis; training in sequence of tenses.
(d) Essentials of an accurate summary; practice in making summaries; telegrams and advertisements.
(e) Continued attention to matters specified in previous classes.

Spelling.—Attention to correct spelling in all written work.

Grammar.—Short course of instruction in formal grammar as an aid to composition.

Writing.—Speed exercises and attention to legibility in all written work.

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* See Notes.

NOTES ON THE ENGLISH SYLLABUS.

Correct Speech.

The Syllabus makes correct speech one of the fundamental aims in the teaching of English. This includes the correct pronunciation of words, the use of words in their correct signification, grammatical accuracy, and completeness in the expression of the pupils' thoughts. As many inaccuracies of speech are due to carelessness, the teacher's object should be to form right *habits* in speaking. The correct pronunciation of the vowel sounds, the correct use of the aspirate and final consonants may be made habitual with children if due attention be given to the correction of errors of this kind as they occur. Grammatical accuracy does not demand a knowledge of formal grammar; it depends rather on the imitation of good models, and requires that errors be corrected as they arise by the substitution of the right expression for the wrong one. The giving of specially made incorrect sentences to be corrected is not advisable; examples of this kind will probably be supplied by the speech of the children themselves, and if they are not, the providing of them is not called for. A later paragraph deals with this point.

Necessity for Full and Complete Answers.

From an early stage onwards, pupils should be required to express themselves fully and completely. An answer conveyed in a word or two is often an indication of an indefinite command of the information sought. At all stages answers should be given in a form so complete as to express fully the information to be supplied. In the more advanced classes the pupil should be able to express himself in continuous statement. Treated in this way, every oral lesson furnishes an exercise in composition, and the child not only acquires facility in the use of the language, but secures a more complete command of facts by the full statement of them.

Discussions.

In the course of oral instruction and examination in the upper classes, mutual questioning by the pupils should be encouraged. Short incidental discussions should be conducted. The teacher should regulate the discussion and bring it to a close at the proper time. The holding of debates on subjects on which the children have very little knowledge should be avoided.

Two Classes of English Lessons.

The Syllabus provides for two definite classes of English teaching—one, the study of literature for the sake of the pure enjoyment which it affords; the other, the more mechanical side of language structure and expression. It is well to keep these distinctions in mind, and to make the teaching of English for every day use entirely distinct from literature.

Reading and Literature.

Literature teaching will consist of the reading of School Magazines and approved books, the reading and learning of choice poems, and the reading aloud by the teacher of such selected poems and prose passages as are suitable in range of ideas to the pupils' stage of development, though expressed in language which is too difficult for them to read. The main purpose of the reading is to widen the range of the pupils' ideas, and to lay the foundation of a taste for literature. The matter read should interest the pupil, so that he may learn to look to literature as a source of profit and pleasure. Whilst the literature lesson will serve to give ideas to the pupils, the teacher should not permit the work to degenerate into the mere imparting of information lest the higher aim be lost sight of. Nor should the ethical value of instruction in literature be forgotten.

The reading of poems, short extracts, and longer stories by the teacher to the pupils should form an important part of the instruction, but should not, as a rule, occupy more than about half an hour a week in short periods. Whilst the main aim of this reading by the teacher will be to give pleasure to the pupils, it will, incidentally, afford him an opportunity of placing before them a model of clear and distinct enunciation, correct pronunciation, and appropriate voice-modulation.

Reading Method Recommended for Initial Stages.

The method recommended for the initial stages of reading is a combination of what are known as the "Look and Say" and "Phonic" methods. By this plan the word is learned, and with it the phonic elements of which it is composed. The alphabetic elements are learned after the sound of the word is known. As the pupil passes through the primers, he should be exercised in the reading of sentences written on the blackboard made up of words taken from the reading course. If the class is made familiar with the words, *is*, *are*, *was*, *were*, and easy pronouns and prepositions, the early lessons can be made interesting by a greater variety of easy sentences than the ordinary reading books supply.

Getting the Sense of what is Read is most Important.

Before a child can read aloud intelligently he must grasp the meaning of what he reads, consequently continuous oral reading should form the final stage in the handling of a reading lesson, and should be preceded by discussions which give pupils a clear grasp of the subject matter. When this has been done, clear enunciation, fluency, and appropriate expression will be secured. Simultaneous reading should be used very sparingly, if at all. As the chief use of reading in later life is to enable one to get the sense of written and printed language, the exercises in school should train the pupil in that direction. To furnish additional opportunity for putting reading to this ultimate purpose, silent reading is necessary. By this means the pupil is to find out what a book has to tell him, and his success will be tested by his power to tell in his own way what he has read. When a child's inability to grasp the substance of what is read is due to words which he does not understand, the mere giving of synonyms for the difficult words is of little avail; such words should be explained by an illustrative use of them in a setting that is familiar to the pupil, so that not merely the meaning but the use of the words may be grasped.

Free-Choice Period.

Provision has been made in the Syllabus for a free-choice period which will give the pupils the privilege of selecting their occupation for a specified lesson-period, say, half an-hour (or longer in the higher classes).

Certain pupils may elect to *read* an approved reader, or a book or magazine from the school library. Others, again, may select *composition* (choosing their own topic). Some may wish for a contest in *oral spelling*. Another group may prefer to *learn poetry* of their own choice (such to be approved). There might also be a *story-telling* group.

It is essential that the teacher should be *unobtrusive* during this period. Whilst cognizant of all that is going on, he should speak only when appealed to. Further, full opportunity for the children to render each other assistance should be allowed.

The Learning of Poetry.

It is neither necessary nor desirable that the attention of the class should be confined to one lengthy poem. The poetry learned should rather comprise short poems, short selections that are complete in themselves, single stanzas, and also detached couplets or single lines which may be worth learning on account of their literary beauty, or their applicability to something else learned. In selecting poetry for each class, its suitability, both in the range of ideas expressed and the language used, should be kept in view, so that it may be appreciated. In the earliest stages pupils are attracted by rhythmical lines before they fully understand their beauty or literary merit.

Newspaper Reading.

The school should do something to train its more advanced pupils in newspaper reading—say, a portion of a lesson once a week. One week the cables might be studied ; another the commercial page ; another the leader, and so on. In girls' schools the woman's page might be taken. Occasional use of a magazine similarly is recommended.

The teacher will take advantage of the opportunity which this work affords to develop an interest in the reading and study of the more literary portions of the ordinary newspaper, and will discourage, as waste of time, the reading of those portions which are purely "sensational" or of merely ephemeral interest.

Common Errors in Speech.

Certain incorrect language forms are common among children, and their elimination is a matter calling for continuous attention from the teacher. Three steps are involved in setting up right habits in these matters :

(a) Short lessons to clear up the point at issue.
(b) Drill in the use of the correct form.
(c) Substitution of the correct for the incorrect form in expressions except where a pupil is struggling with new thought.

Spelling.

Correct spelling is not acquired incidentally, but needs definite and consistent teaching and frequent practice to ensure the visualization and reproduction of correct forms. Every child should be definitely taught within the year the words on the Syllabus list. But this should form only a *part*, and not by any means the most important part, of the instruction in spelling.

Every class-teacher should compile a class-list of the words actually mis-spelled during the year by the pupils then in the class. This list should be formed in the following way: Each pupil should keep a personal list of the words which he has mis-spelt in his composition work, *i.e.*, when attempting to express his own ideas in words. Any word which appears upon (say) 20 per cent. of the personal lists should be regularly entered up on the class-list. The correct spelling of these words should be definitely taught, and there should be frequent testing and revision of this work to ensure that the correct forms are duly remembered, and can be reproduced whenever required.

Dictation, whilst it has other educational values, is chiefly of use in a primary school as a testing exercise, to enable the teacher to judge how far his teaching of spelling has been effective. The dictation exercise should not consist of lists of words. The teaching of rules of spelling might be done to a limited extent.

Clear enunciation favours correctness of spelling in the very many words which are fairly phonetic, and the "saying" of words for spelling should be regularly resorted to.

During the early stages, transcription is an effective aid in the teaching of spelling and punctuation. It may be profitably employed in combination with dictation and composition. The pupils' exercises must be carefully supervised and corrected.

All the written work should furnish exercise in spelling, and importance should be primarily attached to the pupil's ability to spell the words that come within his own vocabulary.

Word building is a valuable aid to spelling, but incidental rather than lengthy, formal lessons should be given. Elaborate blackboard diagrams showing roots, stems and branches, and introducing words quite beyond the pupil's use, should be avoided as waste of time. It will be sufficient if the pupil is brought to see that long words are built out of short ones. In fifth and sixth classes the use of the ordinary prefixes and affixes, and the formation of adjectives from nouns, nouns from verbs, etc., may be profitably treated.

Word grouping is also a help in teaching spelling. By listing such groups of words as (1) could, would, should; (2) rough, tough, enough; (3) Britain, captain, certain, and so on, the child is greatly helped to remember the correct form.

Writing.

The syllabus provides for a progressive course of graded lessons in handwriting. In all schools there should be a definite continuity in the instruction, and in large schools special care should be taken to see that the work in the Third Class (of the Primary Department) is continuous with that of Second Class (Infants' Department).

Writing-charts accompanied by a pamphlet explanatory of the system will be issued to all schools. Copy books with engraved headlines should not be used, but the writing should be done in the books supplied for the purpose, and all these writing books should be carefully preserved in the school until the annual inspection. Pupils should enter at the end of each writing exercise the date of its completion.

For the initial stages of the work the letters of the alphabet have been classified according to certain characteristics.

Group I.—i, u, w, t
Group II.—n, m, r, v
Group IV.—o, a, d, c, e, x
Group V.—l, b, h, k, f
Group VI.—j, g, y, q
Unclassified.—s, z, p.

The letters of group I are built up from the foundation letter *i*. When the pupil is able to form the letter *i* correctly, it is an easy step to combine two of these letters, and thus the letter *u* is evolved. Add a loop to *u*, and the result is the letter *w*. The letter *t* is an elongated *i* crossed.

The next stage consists of combining these letters to form words, *e.g.* :—

it, tit, wit, twit, tut.

So far as specific writing-lessons are concerned, the child should not attempt a new letter until he has mastered the one preceding it in the group ; and the correct forms of letters in one group should be thoroughly acquired before proceeding to the next group.

The specific writing-lessons should last for short periods only, since it is necessary that the pupils' efforts shall be concentrated on the work to be done, and young children soon tire of such mechanical exercises.

When groups I and II have been mastered, numerous graded exercises may be formed from them, as

in, min, minim, minimum.

The other groups may be treated in a similar way. In a short time children will be able to suggest the copies to be written

Style.—Correct letter formation should be based upon the straight line and the oval. Much time and trouble will be saved in the long run if pupils are practised in these forms so thoroughly in the beginning that their work becomes automatic.

Slope.—The slope adopted approximates to an angle of 75 degrees with the base line. To secure correct slope, and consequent parallelism, the following exercise might be practised with advantage. In the lower classes (where children do not know how to use the protractor), the class teacher should draw a line making an angle of 75° with the base line in each child's writing-book, and let the pupil make a number of lines parallel to it. (Infants may term this practice "making tramlines").

In the higher classes pupils should use the protractor for setting out the first line and should then draw a number of lines parallel to it, testing the slope occasionally with the aid of their protractors.

To give the correct slope, the writing-book should be tilted from the right at an angle of 15 degrees.

Loops.—Loops should be made on the base line (for letters like g, j, and y looped below the line) and on the top line, or at the height of the small letters (for letters like h, l, and k looped above the line).

Spacing.—The spaces between letters should be even and all exaggerated spacing should be avoided.

Heights.—Whilst it is not expected that pupils, when writing a fluent hand will be mathematically correct in the heights of letters, still there should be some standard for the beginner, so that certain letters may not be made unduly long or short. Taking such a letter as a, or m, or o, as one height then t, d are two-height letters; l, b, h, k are 2½ heights (above) j, g, y, q, z are 2½ heights (below); p and f are three heights, one between the lines in double-ruled books, one height above the top line, and one height below the base line.

Letter Drill.—As in Arithmetic, certain tables require much more drill than others, so in writing, there are some forms which require much more practice to give children the necessary facility in using them, *e.g.*, the letters "f" and "s" present difficulties to beginners. When the necessary practice o a letter has secured the accuracy required, the next step is to apply such letter in simple words, *e.g.*, "s" in "as," "ass," "mass," "pass."

Combinations.—Another useful exercise is the combination of certain letters, where such combinations present more than ordinary difficulty, as "as," "os," "sa," "so," "se," "ra," "ro."

Holding the Pen.—Special attention should be paid to the manner of holding the pen.

Correct Posture.—In all classes it is most important to insist on correct posture of the body when writing. The pupil should sit almost erect, with the head slightly inclined to the desk; the eyes should be at least 12 inches from the writing-book (pupils up to the age of 12 years are naturally long-sighted). The wrist should be kept flat, the elbow should be reasonably close to the side, the body square to the desk, and the feet firmly placed on the floor.

The Test.—In the lower classes all written work should be neatly done, and it should agree in style with that taught in the specific writing lesson.

But in the senior classes, where speed is nearly as important as legibility, it is not so necessary to maintain absolute uniformity of style. So long as there is clearness and some beauty of penmanship in *all* written work the result will be satisfactory. In these senior classes the pupils' handwriting will be judged from the general character of the note books, arithmetic, and other exercise books, as well as from the specific writing-practice books.

Fluency.—An easy and free style is to be aimed at from the first. But in the early stages, and even up to the Fifth Class, any attempt at fast writing should be prohibited. Nevertheless, such a degree of fluency should be developed from the beginning as will lay a foundation for that speed in writing which is expected of pupils at the end of their primary course.

Where pupils need to lift the pen in the middle of a long word they should be trained to do so at a part which will enable them to complete the word in such a fashion that no appearance of a junction can be detected.

The movements of the pen are made by the combined action of the thumb and the first and second fingers, aided slightly by the action of the wrist and the forearm. To develop the muscles used and to give greater freedom in movement, and consequent greater speed in writing, certain finger and wrist exercises are necessary. These are fully described and illustrated in the pamphlet accompanying the writing charts.

Practice in the formation of capital letters should be commenced in Class III.

There are five groups of capitals:

Group I includes ... ... L, S, I, J, T, F, D.
" II " ... ... P, B, R, H, K.
" III " ... ... A, M, N, W.
" IV " ... ... O, C, G, X, E.
" V " ... ... U, V, Y, Z, Q.

Use of Words more Important than Grammar.

Formal grammar enters into the syllabus to a limited extent; but within the prescribed limit thoroughness in teaching is most essential. The whole course to the end of the sixth class work embraces only the functions of words and their connection with one another, the inflections and case relations of nouns and pronouns, tense of verbs, and the general analysis of sentences. The function of a word should be ascertained through numerous examples of its use in sentences. A formal definition may eventually be rrived at, but *the use* of the word is the primary and essential matter.

Accidence.

The following may be suggested as an outline of a method for treating the work included in the Course under this head :—

(a) Study of the forms of the noun. Why does it change its form? Leading to the discovery that it does so—
  (1) to express plurality;
  (2) to express possession.

(b) Study of the forms of the pronoun. Why are different forms used? Leading to discovery that thus is shown—
  (1) Whether the reference is to the speaker, the one spoken to, or that spoken about;
  (2) Whether the reference is to a male or a female. (This distinction is shown only to limited extent)
  (3) Whether the reference is to one or more.
  (4) How the pronoun is related to verbs, nouns, and prepositions.

(c) Study of the forms of the verb. Why are different forms used? Leading to discovery—
  (1) That they vary to a limited extent as the nominative varies;
  (2) That they vary to express time.

Oral Composition to be followed by Written.

All oral answering will afford exercise in composition, and from a very early stage a certain amount of written composition may be done.

Before the pupil is required to express himself on any subject, the teacher should see that he is possessed of some ideas to express and a desire to express them; thus his composition should deal with the subject-matter that has already been treated in previous lessons, or with which the child's ordinary life has made him familiar.

Self-expression.

Great variety should mark the expressive work, especially in the lower classes. Oral expression, while the most valuable, should not be used exclusively. Ideas are liberated much more freely and with much greater vividness when drawing, modelling in sand or plasticine, making, paper-cutting, and dramatization are freely resorted to.

The expressive drawing of the child from five to seven years of age may not convey much to the adult, but the enjoyment with which the boy interprets it in speech shows how much it has done to clarify and vivify his ideas. The teacher will not be troubled by wandering attention while a class, gathered round the sand-tray, works out the story of Little Red Riding Hood. The picture, built up as community work by paper-cutting, supplemented, perhaps by a little chalk, is an enduring source of satisfaction to little children. The dramatization of stories now so often used, is a revelation to the teacher who sees it for the first time. All artificiality should be studiously avoided, and the child's self-confidence sedulously preserved. Neither gesture, action, nor speech should be taught. Let them come naturally.

All this should reinforce the child's power of oral expression by clarifying his ideas and shaping them in an atmosphere of appropriate emotion. The story told by the teacher, after being reproduced by the children through one or more of these channels of expression, should culminate in what might be called a final form. From a story which has entered into the possession of a class, incorrect language forms should have been eliminated.

The dramatizing instinct of children may be turned to good use in composition, and opportunities should be afforded for composition of an imaginative character. The earliest exercises should be in the form of autobiographies and imaginary conversations. These may be followed at an appropriate stage by exercises which call into play the pupil's inventiveness and constructiveness in story-telling.

In the written composition of the lower classes there are two distinct kinds of work :—(1) The free composition aims at getting the pupils to write a page or so upon topics which interest them. A fair *quantity* of matter and facility in the use of language are desired. If a too minute attention is given to the forms of expression in this free composition it will kill the spontaneity and freedom which the exercise is intended to encourage. But (2) the more formal training in written composition will be begun by selecting, in the second class, one sentence at a time, and in the third class, a few short sentences on one topic upon which children may be practised in correct forms of expression. It is important that these two kinds of work be kept separate.

In the senior class it might be practicable to establish a manuscript journal to be controlled by the pupils under the guidance of a teacher. This journal would furnish a motive and an opportunity for writing correct and fluent English. The journal would serve to give expression to the social spirit of the school community through brief reports of the doings of the various school clubs and of the achievements of pupils and ex-pupils. It would also include short stories, poems, and other compositions by the pupils which could be discussed and criticized in class.

ADDENDA TO THE SYLLABUS IN ENGLISH.

1. A scheme of phonic exercises.
2. A list of poems suggested for memorization.
3. A list of stories suitable for lower classes.
4. Syllabus spelling lists.
5. A list of poems and stories suitable for reading by the teacher to the class.

ADDENDUM I.—A SCHEME OF PHONIC EXERCISES.

Hints for Teachers who have not studied Sounds, or Speech Generally.

Try to grow critical about general speech, and distinguish between distinct educated speech and careless speech. Try to realise *why* you think one is distinct and another is careless.

Before giving drill in a particular sound be sure you know in your own mind the exact quality you are going to teach. (Otherwise the quality is apt to change during the course of the lesson, and confusion in the mind of the children will result.)

When preparing a sound drill, repeat the sound several times before a mirror. (If diphthongs are drawled for about ten seconds, the two elements can be plainly heard and *seen*.)

Drill should be given for a few minutes every day. Sentences, rhymes, poems, are suitable for speech-training; but these should never *replace* daily drill in sound, but *supplement* it. Only one *new* sound should be taught at a time, but there should be constant revision of those already dealt with.

The first seven vowels and first three consonants on the list are commonly mispronounced. Some at least of the other vowels and consonants will need attention, but the abovementioned *must* have it.

Daily Drill in Vowel Sounds.

i. o—the sound is go.

don't, home, sold, rose, load, post, snow, gold, throw, no, fold, moan, window, yellow, ocean, over.

(This is a round full diphthong; the mouth is rounded for the first element, and becomes more rounded for the second.)

ii. a—in lady.

cake, wait, lame, haste, main, place, day, fail, age, nail, made, paper.

(This is a diphthong which must *not* be like the "i" in die.)

iii. i—in kind.

try, find, nice, pint, why, light, pie, night, I, ripe, sigh, mine.

(This is a diphthong of which the first element is the "a" in ask. This "a" must *not* tend towards "o," troi, oi, for try, I must be avoided.)

iv. a—in cat.

have, black, cat, snatch, ran, sat, bad, sand, lad, hand.

(This is a simple sound, for which the mouth is fairly widely open. It must *not* approach hev, bleck, cet, &c.)

v. ee—in see.

please, read, green, tree, neat, sheet, glee, feel, ease, weed, beat, keen.

(Care must be taken in attaching the "ee" sound. These words frequently develop into a diphthong, of which the first element resembles the vowel in earn.)

vi. oo—in cool.
blue, school, true, through, whose, flew, grew, rude, loose, blue.
(The lip, must be rounded for this sound.)
vii. ow—in cow
round, out, house, about, down, shout, pounce, town, cow, now.
(This is a diphthong, the second element of which is "oo," unstressed. The first element is between *a* in cat, and *a* in ask; the former is especially to be avoided.)

I think the outstanding mispronunciation of vowels are in the seven above examples.

Other vowels sounds are—
viii. i—in hip, is, hill, slip, rid, it, pinch, list.
ix. e—in led, head, when, lest, bed crest, lend.
x. a—in ask, hard, last, laugh, harm, carl.
xi. o—in gone, lost, hot, want, not, cough.
xii. aw—in law, caught, fall, short, talk, coarse.
xiii. u—in pull, should, look, full, push, put.
xiv. er—(short and unstressed) water, harder
xv. er—(long) earn, word, heard, curl, first, her.
xvi. u— ,, fun, hunt, rust, love, bun, won.
(The last eight sounds are simple.)
xvii. oi—in joy, noise, boy, moist, spoil, coin.
xviii. air—in air, stairs, fair, snare, where, pear.

Consonant Drill.

i. h—in house, hop, horse, have, has, had.
ii. ing—doing, singing, thinking, something, nothing.
(ng must not be n, and the preceding vowel ("i" in hit) must not be a sound approaching the u in "fun".)
iii. Final consonants.
night, drag, take, begged, clothes, dogs, hats, grasps, &c.

Consonant Sounds.

p—pen.
b—book.
t—time.
d—did.
k—king.
g—go.
m—my.
n—no.
ng—doing.
l—lend.
f—fun.
v—vow.
s—sing.
z—zoo.
sh—shut.
s—pleasure.
th—thistle.
th—this.
w—we.
wh—when.
h—beat, hit, head, hat, hard, hot, haughty, hut, hood, heard.
y—yes, young, university, union.

Peculiarities noticed in the Pronunciation of Children in Sydney.

Peculiarities of any pronunciation may be roughly divided into two classes—those peculiarities which affect the speech as a whole and those in individual sounds.

Those peculiarities of both classes which seem most noticeable in the pronunciation of the Sydney child may be indicated. Under the first heading there are three features to be noticed—the tendency to nasalization, the tendency to drawl, and the neglect of lip-movement.

1. Nasalization, which is usually noticed by an untrained ear only when it is very pronounced, forms, in reality, a feature of the speech of most of the children. There are three nasal sounds in English [m] [n] [ŋ] spelt m, n, and ng, formed by air escaping entirely through the nose. But the children produce other sounds, partly through the nose, too, both vowels and consonants, which, strictly speaking, should be formed by air escaping entirely through the mouth. The degree of nasalization of a speech depends on the quantity of air thus escaping through a passage which should have been blocked; but a very small quantity, to a listening ear, will spoil the speech.

2. The drawl, which term is used for want of a more technical one, is really produced by two processes. One is the diphthongizing of what are long sounds in standard English, and the second is the lengthening of some short ones, and subsequently the diphthongizing of them. The result is the "drawl," frequently only noticed when very pronounced, but which, nevertheless, is commonly present in a less degree.

3. The lack of characteristic lip-position alters sounds in an astonishing way when one is not accustomed to the idea that every movement of the lips—however slight it may be—modifies the sound. If, for instance, the back vowels, which are normally rounded, are left entirely unrounded, the sounds must necessarily be affected. There is hardly a trace of lip-rounding to be seen in the children.

These three features, which are usually to be noticed in the pronunciation of the children in Sydney, must necessarily affect their speech as a whole.

The outstanding differences in individual sounds—between the pronunciation of the children and standard pronunciation—may now be indicated. The alphabet of the International Phonetic Association is used for the sake of brevity and clearness.

The peculiarities in the pronunciation of individual sounds are to be heard mainly in the vowels. Consonants on the whole are well enough said. There is a tendency to drop final consonants, particularly the "g" in words like "doing," and also to drop the initial "h." But both these can be explained physically. They are mainly due to the instinctive economy of effort strengthened by the force of imitation. This economy is characteristic of all speech as it progresses. Sometimes it is sanctioned, and sometimes it is not permitted. As children grow older, education and example do much to counteract this tendency if it be not sanctioned, which, after all, in the case of "h," is the misplacement, not the mispronunciation, of a sound. Physically, it is easier to drop an "h" than to insert it; and when it is mis-inserted it is only through inappropriate effort, prompted by the consciousness of the existence of the "h" in the language. The termination "ing" is mispronounced when the "g" is dropped; n [n] is used for ng [η], and to feel the economy of effort at work here, one has only to repeat [du:in] "doin'" and [du:iη] "doing," a few times to decide which is the easier to say. Children hearing both will naturally choose the easier and unsanctioned way until they have been taught that it is wrong. Somewhat similar economy is felt in words like "think" and "thank," where the "n" is pronounced ng [η], because, by reason of the following k, it is easier. This simplification is sanctioned, however, while [n] n for [η] ng in words ending in ing certainly is not. Instinct cannot lead children to draw the distinction line. If the speech they hear around them is good, they imitate it readily; but if it is bad, what is right and what is wrong has to be taught them.

Amongst tiny children, too, are the lisping pronunciations of the consonants r [r], th [θ], th [đ] are pronounced [*w*], [f], [*v*] until a little practice sets them right, unless the vocal organs are imperfectly formed. These are, after all, pretty good though not perfect attempts to imitate. They are not quite perfect because the speech muscles are not as thoroughly in working order as the ear is.

There are many vowel sounds which are different in the pronunciation of the children to those of standard pronunciation. Most of these renderings unfortunately are not improvements, some are distinctly ugly. Perhaps with one exception, the final sound [ɪ] of words like "very," "Sydney," becomes [*i*:] in the speech of the children, and there seems no reason why this should not be. Otherwise the vowels heard in the children when not standard are not to be praised; in some cases they are hardly recognizable.

In standard pronunciation there are two close vowels, preferably long, though sometimes diphthongized. Those are [*i*:] or [ɪ *i*] in "heed" and [u:] or [U u] in "soon". The former becomes [ə:ɪ], while the latter is greatly diphthongised, and also is not rounded in its latter element [ə:u]. Here we find two hints as to the cause of the failure to produce correct vowels; one is the slowness to attack a sound, so that [e:] is produced, while the tongue is rising to the position of [ɪ] and [U], and the second is the attempt to form the sound [U] without rounding of the lips, which is impossible.

The sound [æ] in "cat" is different. It is a short sound, and for it a simple short sound is heard which is between [æ] and [ɛ], but nearer [ɛ]. By most children, however, it is diphthongized, [ɛ] being followed by a sound almost [ə]. The short clear [æ] is rarely heard.

The other outstanding differences are to be heard in the diphthongs.

[eɪ] in "day" is a diphthong, for the first element of which the tongue should be high in the mouth. But in the speech of the children this first element resembles [*a*], for which the tongue is flat, or other sounds intermediate between [*e*] and [*a*]. So in this the same unwillingness is noticed to attack a high sound that was in [*i* :] and [*u* :]. This [*a*ɪ] in "eye" for [*e*ɪ] would make it difficult to know whether "die" or "day" was meant but for the fact that the children who say [*da*ɪ] "die" for [*de*ɪ] "day," say something else when they really mean [*da*ɪ] "die." The first half of this diphthong [*a*ɪ] becomes something nearing the sound [ɔ:] in "door," so that the attempt at [*da*ɪ] becomes a diphthong rather like [ɔ:ɪ], the diphthong in "boy." A variation of this diphthong is heard sometimes when [*a* ɪ] becomes something like [əɪ]; and again, it becomes sometimes the long [*a*:], as "I'm going to" [*a:m*].

A third diphthong [*ou*] in "go" is seldom rounded, even if the tongue takes its position for these sounds. But more frequently the first element is [ʌ] in fun and the second an unrounded [ʊ]; that is, [ʌʊ] is produced. A third time is noticed, then the failure to attack a high sound [o], which results in the production of a lower sound [ʌ] and also the omission of lip-rounding.

The diphthong [ɛə] in "care" is pronounced in several ways. It is sometimes altered to one long sound, which, curiously enough, is a higher sound [e:]. This is most often heard when it is not final—that is, when the tongue has another position following closely on [ɛə], making it easy to omit the second part of the diphthong. Then often it is [e:ə], instead of [ɛ:ə], the first element being closer than the standard. Sometimes this diphthong is pronounced as two syllables, as is almost [ɛjə] or [ejə]. This sound is very commonly nasalised, and in such expressions as I don't *care*, be *careful*, the vowel is regularly nasalised.

The diphthong in "boy" [ɔi] has not so many variations. The chief one noticed has been a diphthong, of which the first part is produced further back in the mouth and lengthened.

The diphthong in "cow" [aʊ] is formed by the tongue being flat for the first element, and then taking a high position at the back of the mouth for the second part. The children change both these sounds. The [a] is altered to a high front sound, sometimes [e], as in head, sometimes [ɛ], and [æ] in cat. The [ʊ] is left unrounded. So that [au] becomes [eʊ], [ɛʊ], or [æʊ], with the latter half loosing its lip-rounding. Nasalisation is to be noticed in this diphthong, too, perhaps more than in any of the others. These variations are more frequently [a͠ʊ], [ɛ͠u], [e͠ʊ].

These are the sounds which are most altered in the speech of children in Sydney: the sounds [i:] in "heat," [u:] in "pool," [æ] in "cat," [ei] in "day," [*a*i] in "die," [ou] in "go," [ɛə] in "care," [ɔi] in "boy," [*a*u] in "cow."

Nasalization, drawling, and carelessness of lip movement also characterize the speech of many Sydney boys and girls.

ADDENDUM II.

A list from which poems may be selected for memorization by the pupils.

Class I.

	Nursery Rhymes.
	Nonsense Jingles (as in Pinafore Palace).
Stevenson	Bird with the Yellow Bill.
	My Bed is my Boat.
	Bed in Summer.
	Bed in Winter.
	The Rain.
	At the Seaside.
	The Sun.
	Morning Comes.
	Of Speckled Eggs.
	I Woke before the Morning.
	The Friendly Cow.
	The Land of Counterpane.
	A Good Play.
	The Swing.
	Windy Nights.
	I Saw You Toss the Kites on High.
	The Moon.
	Singing.
	The Flowers.
	Marching Song.
	Travels.
	The Cherry Tree.
Rossetti	The Wind.
	Minnie and Mattie.
	The Ferryman.
	The Bee.
	The Rose.
	Kindness.
Eugene Field	Japanese Lullaby.
	The Rock-a-by Lady.
	Little Boy Blue.
	Good Children Street.
	Lady Button Eyes.
	The Ride to Bumpville.
	Love Song of Childhood.
	Lullaby Land.
	The Fly Away Horse.
	Child and Mother.
	The Night Wind.
Thompson	Mr. Nobody.
	Underneath the Sea.
	Lady Bird.
	The Rabbits.
	The Little Tin Soldiers.
	Sparkle, Sparkle Little River.
Coleridge	The Trees.
	The Months.

Coleridge	Do You Ask What the Birds Say. A Child's Wish.
Weatherley	My Baby. The Cat's Tea Party. The Gray Dove's Answer.
Kingsley	The Lost Doll. River Song. Oh! I Wish I Were a Tiny Brown Bird.
Herrick	Violets. Queen Mab.
Shakespeare	Where the Bee Sucks. Full Fathoms Five. Come unto these Yellow Sands. Under the Greenwood Tree.
Tennyson	Birdie and Baby. Minnie and Winnie. The Snowdrop. Sweet and Low. The Poet's Song. The Merman (selections). The Mermaid (selections). The Owl. The Sea Fairies Song.
Blake	The Laughing Song. Spring. The Little Boy Lost. The Little Boy Found. Infant Joy. The Sea. The Shepherd.
Setoun	Baby's Big World. What the Leaves Say. How the Flowers Grow. Spring Time. A Mystery. City Sparrows. Jack Frost.
Keats	The Daisy Song. My Dove.
Lord Houghton	Lady Moon. A Fair Little Girl.
G. McDonald	The Baby. The Child and the Moon. Up and Down.
Jean Inglelow	Seven Times Seven.
Lawrence Tadema	Snowdrops.
Emerson	The Mountain and the Squirrel.
Kendall	Extracts from the Months. Extracts from the Bell Birds.
Gordon	Selections from "A Dedication." Selections from "Ye Wearie Wayfarer."
Ethel Turner	Gum Trees.
Richard le Gallienne	Morning. Evening Song.

Class II.

The Arab and His Horse	Taylor.
The Boy's Song	Blake.
The Better Land	Mrs. Hemans.
The Brook	Tennyson.
The Bow that Bridges Heaven	Christian Rossetti.
The Brown Thrush	Lucy Larcom.
Eurydice	Bourdillon.
The Fountain	Lowell.
Farewell to the Farm	R. L. Stevenson.
How the Leaves Came Down	Coolidge.
The Humming Top	Eugene Field.
Little White Lily	G. Macdonald.
The Lamplighter	R. L. Stevenson.
The Lamb	Blake.
My Shadow	R. L. Stevenson.
The New Moon	E. L. C. Follen.
Parts of Hiawatha	Longfellow.
The Piper	Blake.
Robin Red Breast	Allingham.
The Sunbeams	Emilie Poulsson.
Two Little Kittens	Jane Taylor.
The Wind in a Frolic	Howitt.
The Wonderful World	W. B. Rands.

Also those named in the list for Class I.

Class III.

Answer to Child's Question	Coleridge.
Foreign Lands	R. L. Stevenson.
John Gilpin	W. Cowper.
Good Night and Good Morning	Lord Houghton.
The Lost Doll	C. Kingsley.
May	Wordsworth.
Nature's Teaching	Longfellow.
The Pied Piper	R. Browning.
The Pedlar's Caravan	W. B. Rands.
Spring	Shakespeare.
Song from Pippa Passes	Browning.
A Song of Willow	Shakespeare.
To the Celandine	Wordsworth.
In a Garden	Swinburne.
To a Butterfly	Wordsworth.
The Voice of the Grass	Boyle.
Where go the Boats	R. L. Stevenson.
Wishing	Allingham.
The Wind and the Moon	G. Macdonald.
Wynken, Blyken, and Nod	E. Field.

And such Poems as appear in The School Magazine from time to time.

Class IV.

An Arrow	Scott.
Break, Break, Break	Tennyson.
The Brooklet	Longfellow.
A Bird's Nest	Hurdis.
To the Cuckoo	Logan.
The Cuckoo	Wordsworth.
A Farewell	C. Kingsley.
The Garden that I Love	Tennyson.
The Heritage	Lowell.
Hohenlinden	Campbell.
Home, Sweet Home	Payne.
The Last Rose of Summer	Moore.
Lullaby	Tennyson.
The Minstrel Boy	Moore.
My Native Land	Scott.
Our Common Birds	Emerson.
He Prayeth Best	Coleridge.
The Rainy Day	Longfellow.
Requiem	R. L. Stevenson.
Stars	Barry Cornwall.
To-day	Carlyle.
Harry Dale	Henry Lawson.
The Wattle	Veronica Mason.

And such poems as appear in The School Magazine from time to time.

Class V.

The Arrow and the Song	Longfellow.
To Daffodils	Herrick.
The Daffodils	Wordsworth.
The Deathbed	Hood.
Fairy Songs from	Shakespeare.
How Sleep the Brave	Collins.
The Last of his Tribe	Kendall.
Lucy	Wordsworth.
The Meeting of the Waters	Moore.
My Garden	Brown.
Short Quotations from	Shakespeare.
Solitude	Wilcox.
Soldier Rest	Scott.
The Sea	Barry Cornwall.
The Soldier's Dream	Campbell.
Three Fishers	Kingsley.
Who is My Neighbour ?	Lowell.
Wattle	Mollie A. McNutt.
The Wayside Well	Chas. Mackay.
A Wet Sheet and a Flowing Sea	Cunningham.
Young and Old	Kingsley.

And such poems as appear in The School Magazine from time to time.

CLASS VI.

Abou Ben Adhem	Leigh Hunt.
Apostrophe to Night	Young.
To Althea from Prison	Keats.
A Beauteous Evening	Wordsworth.
To Blossoms	Herrick.
Clancy of the Overflow	A. B. Paterson.
Farewell	Byron.
A Farewell	Kingsley.
The Fatherland	Lowell.
Lord of Himself	Wotton.
Men of England	Campbell.
Ode to a Nightingale...	Keats.
On First Looking into Chapman's Homer	Keats.
The Noble Nature	Ben Jonson.
Patriots	Cowper.
Rose Aylmer	Landor.
Rule Britannia	Thomson.
The Sand Piper	Thaxter.
Short Quotations from Plays by ...	Shakespeare.
Say Not the Struggle...	Clough.
Sonnet on His Blindness	Milton.
The Sick Stockrider	A. L. Gordon.
The Skylark	Shelley.
" "	Hogg.
" "	Wordsworth.
The Splendour Falls	Tennyson.
The Universal Prayer	Pope.
Vitai Lampada	Henry Newbolt.
Virtue...	Geo. Herbert.
The Wind	A. A. Procter.
Yussouf	Lowell.

And such Poems as appear in The School Magazine from time to time.

ADDENDUM III.

List of Stories suitable for first and second classes, as Supplementary Readers.

The Three Pigs.
The Three Bears.
Henny Penny.
The Wolf and the Seven Little Kids.
Tom Thumb.
The King with the Golden Touch.
The Snow Queen.
Red Riding Hood.
Beauty and the Beast.
Jack the Giant Killer.
The Frog Prince.
Cinderella.
Puss in Boots.
Dick Whittington.
Sinbad the Sailor.
The Sleeping Beauty.
The House that Jack Built.
Aesop's Fables (Ginn).
Peter Rabbit.
Ali Babi.
Jack and the Bean Stalk.
Stories from Robin Hood (Jack).
Tales from Bunyan (Jack).
Uncle Remus and his Friends.
Benjamin Bunny.
Squirrel Nutkin.
The Seven Dwarfs.
Thumbelina.
The Babes in the Wood.
The King and the Wood-cutter.
Thor and the Giants.
Robinson Crusoe.

ADDENDUM IV—THE SYLLABUS SPELLING LISTS.

SECOND CLASS.

able
above
acre
again
among
animal
angry
anywhere
baby
ball
bead
bean
bear
beauty
better
bread
break
build
bunch
butter
calm
care
catch
chair
chalk
clean
climb
coal
cover
crust
comb
colour
dawn
death
does
donkey
dream
dinner
each
earn
eggs
eight
evening
every
facing
fare
feel
fence
fight
fleet
flesh
flies
flower
flying
fowl
fright
gain
garden
gas
girl
glove
goat
great
ground
grow
goose
grapes
grocer
hair
hammer
handle
happy
hawk
head
heel
health
here
heart
hunger
ice
iron
indeed
island
jacket
jelly
jewel
juice
jumped
just
keep
kick
kitten
knife
know
knot
lace
ladder
lawn
lead
leaf
leak
letter
limb
lion
load
loaf
loan
love
low
made
main
making
manner
meal
message
middle
mother
mountain
mouse
mouth
mutton
nail
nasty
nation
neat
nearly
needle
nigh
none
number
oak
oats
ocean
offer
only
orange
order
our
own
oven
paid
pair
pale
paws
peace
peach
petals
picture
please
plenty
pony
pretty
prize
pudding
queer
race
raw
read
ribbon
riding
right
river
road
roar
roast
roll
rope
rough
running
sale
some
scales
school
seek
shadow
shells
shooting
soldier
something
stalk
steamer
store
sweet
table
tall
thief
thumb
tide
tight
tried
truth
tune
under
upper
vex
wander
want
watch
yard
years

THIRD CLASS.

actor
accept
ached
action
afternoon
agree
alike
almost
amuse
August
Australia
basin
basket
beach
because
beneath
brooch
braid
busy
careful
cease
ceiling
certain
children
cheese
choose
cinder
coast
crease
crumb
curing
daughter
defend
depart
depth
dough
draught
dreaming
eager
earth
easy
echo
edge
effect
either
empty
engine
enough
equal
exhibit
fairy
famous
father
feather
feature
ferns
field
flea
forget
fruit
friend
fury
gather
gender
gentle
giant
glass
gnat
good-bye
guess
half
harbour
heavy
heard
honey
however
huge
hurry
idler
idol
increase
inform
jamb
jaunt
jealous
join
kettle
kitchen
kneel
knit
knight
knock
know
labour
lady
laugh
launch
learn
leather
lemon
lesson
level
likeness
lose
maize
market
mamma
manage
maiden
medal
mistake
money
monkey
music
narrow
nation
neigh
nephew
ninth
noise
notice
oar
obey
object
often
once
orphan
other
pace
paddock
papa
parcel
parent
pencil
pepper
plough
polite
potato
prince
quaint
quarter
quill
queen
question
quoit
rabbit
rainbow
rapping
refuse
repeat
result
satin
salt
scout
scratch
soap
search
should
shrub
soda
stalk
stream
stretch
sugar
surely
tail
threw
timid
teacher
toes
together
tomorrow
touch
traveller
trimming
twelve
tyre
tying
ugly
used
vase
vein
view
victory
village
vinegar
violet
voyage
walking
wait
wanted
waters
wealth
welcome
wheel
wreath
writer
yonder
young
yours

FOURTH CLASS.

absence
accepted
accident
aching
address
advise
affectionate
allowed
altogether
ample
approach
arrived
attack
attempt
autumn
average
baggage
bacon
banner
barrow
battle
beautiful
beginning
borrowed
breakfast
breathe
brightness
builder
business
carrying
clamour
column
convey
copied
cough
courage
curious
curtain
damaged
danger
daring
deceive
defence
delicious
desert
diamond
dictation
digest
disappear
disc
dismal
dropping
earlier
eighth
essential
ewe
examine
fables
factories
faggot
famished
fanciful
favour
fearless
feather
fiery
floating
forty-four
foreign
frequent
friendship
gables
gnawed
governor
grammar
hazy
hearken
heifer
height
heroic
hymn
idiot
imagine
immediately
incense
inquire
insect
intend
invitation
journey
joyful
joyous
jubilee
juicy
jury
kernel
kerosene
khaki
knack
kneeled
knowledge
laughed
learned
lieutenant
linen
lingering
liquid
listening
lodging
majority
marriage
management
materials
measles
medley
military
mockery
motor
mutiny
mystery
naughty
neighbours
neither
niece
ninety
nymph
obedience
obscure
offering
opportunity
perceive
persuade
pleasant
plentiful
precede
proceed
procession
prohibit
project
prominent
propel
prosperity
pursue
quiet
quite
quickly
quays
quotient
raisins
received
relieved
remembrance
regularly
rhyme
righteous
route
saddler
scissors
secrete
sensible
separate
serious
sign
skilful
squeeze
stalked
stopped
straightened
sufficient
taught
their
there
though
thought
travels
uncle
united
universe
untied
until
unwieldy
usually
vapour
valleys
very
villain
violin
vulgar
weather
weight
whistle
wilful
wrapped
wrist
yacht
yeast
yesterday
yield
yolk
youthful

FIFTH CLASS.

abolished
accuracy
accuse
across
adjourn
aerial
agreed
allotment
almanac
ancient
artificial
audience
awful
ascend
balloon
banquet
believe
biscuit
bouquet
brief
broad
bulwarks
carelessly
caterpillar
cathedral
cauliflower
cautious
celery
centuries
chemist
chimney
chaos
cigar
compel
conceive
conscious
creature
croup
dahlia
dairy
daisies
debt
deceit
depôt
doubtless
easel
electrical
eminence
emptied
ensign
especial
essentially
eucalyptus
existence
faithfully
familiar
fatigue
fierce
flannel
forfeit
frenzy
fulfil
furniture
galloped
gamble
gaol
garlic
gaudy
gauged
gnawing
grievance
guava
guinea
handkerchief
height
hoard
hospital
ideal
immense
imminent
immovable
indicative
inexhaustible
infinite
innocence
interrupted
isosceles
jealous
judgment
knapsack
knotted
laundress
laurel
laziness
leisure
lettuce
levelled
library
lightning
liniment
losing
lucerne
lustre
machinery
martial
mayor
mignonette
minority
moisten
mosquito
movable
muscle
myriads
navies
necessity
niche
noisily
nuisance
obliged
observed
obsolete
onions
oozy
opposite
opaque
orchards
organize
owner
oyster
parachute
partition
parsley
pathetic
petition
phial
piano
pitiful
poison
prairies
precious
preferred
pressure
prophet
pyjamas
programme
quantities
quarterly
quartz
raspberry
recent
recitation
recurred
rescued
respectfully
rinsing
ruined
rumour
sacrifice
safety
salary
salute
sausage
scenery
seizing
sever
shining
sheriff
siege
sieve
stirred
sovereign
surprised
syphon
tariff
telegraph
telephone
tourist
thigh
thorough
thwart
toilet
tomahawk
tremendous
trousers
truly
umbrella
unconscious
union
upwards
vegetable
vehicle
victuals
weasel
whether
wholesome
wholly
woollen
wretched
wriggled
zealous

SIXTH CLASS.

abandon
abbreviate
abolition
abscess
accede
accessible
accommodation
achieve
acquaintance
advertisement
altar
ammunition
analyse
anniversary
anointed
appreciate
artificer
ascertain
association
balance
barrel
basis
battalion
bazaar
benefited
benevolence
benzine
bereavement
besought
bilious
boarded
breeze
Britain
bruise
buried
bursary
calmly
calendar
cancel
cemetery
clayey
column
conqueror
conscious
committee
compulsory
corroborate
countenance
decimal
deceitful
definite
deign
delirium
dense
diameter
dictionary
disappointed
dissension
domesticated
dysentery
easily
eccentric
ecstasy
edible
embarrassment
erratic
facetious
fascination
fashion
feigning
gaoler
gardener
gaseous
guidance
gymnastic
habitual
harassed
haughty
historian
humour
hydraulic
hypocrite
icicles
illegal
impetus
incense
incomprehensible
indispensable
intelligible
intrinsic
jeopardy
jocund
journeyed
judicial
kilometre
kneading
label
languor
league
license
livelihood
loosen
loveliest
lucrative
magistrate
magnificent
militia
ministry
miscellaneous
mischievous
monastery
monotony
mucous
nauseous
negotiate
neutralize
nocturnal
nominative
notable
noticeable
noxious
nutritious
oasis
occasion
occurred
orchestra
ordnance
oxygen
parallel
paralysis
peaceable
perseverance
petrified
phenomenon
photograph
picturesque
pitiable
plural
possessive
precisely
precedent
predicate
qualm
quandary
quarantine
quarrelled
quorum
rapacious
raucous
receipt
remnant
sanguine
schemes
schooner
scythes
seven
similar
spoonful
stationery
submarine
sulphur
survivor
swollen
symptoms
technical
tenacious
theme
timidity
toilsome
transitive
traveller
tremendous
tried
triumph
twining
typhoon
unanimous
unchangeable
uncouth
uniform
unmanageable
urban
urchin
vague
venerable
vengeance
version
vicious
villains
visible
wearily
Wednesday
weird
westerly
whistling
wrinkle
writhing
wrought
yearning
yeoman

ADDENDUM V.

List of Stories and Poems suitable for telling (or reading) by the Teacher to Classes I and II.

Andersen's Fairy Tales.
Alice in Wonderland.
Bubbles, His Book (R. F. Irvine).
Bushland Stories.
Dot and the Kangaroo.
Flower Legends for the Children.
Book of Fables (Houghton).
Book of Nature Myths (Florence Holbrook).
Just So Stories (Kipling).
Rewards and Fairies.
Thompson Seton's Lobo.
Puck of Pook's Hill.
John Gilpin.
The Pied Piper,
Shock Headed Peter.
Jungle Book (Kipling).
Hiawatha.
Greek Myths.
Simple Bible Stories.
The Little Black Princess.
Arthurian Stories.
Australian Legendary Tales (Parker).
Stories from Wagner.
Rolleston: Myths and Legends of the Celtic Race.
Squire: Celtic Myths and Legends.
Ebbutt: Hero Myths and Legends of the British Race.
Wordsworth: Daffodils, To the Celandine, The Cottager to her Infant, The Wild Wind, Written in March, Story of Two Days, The Blue Tit.
Herrick: Daffodils.
Shelley: The Widow Bird, Morning, Evening, parts of The Cloud
Lowell: The Fountain.

Also, many of the poems mentioned for memorization in higher classes.

MATHEMATICS.

Work in Mathematics must be Practical.

The very practical purposes that mathematical work has to serve in the child's future life should regulate the character of it in school. The teaching of the subject should aim at the working of practical concrete examples, and readiness and accuracy in mechanical processes. No part of a child's primary school life should be wasted in attempting to solve problems that have little connection with actual experience, or in working mechanical sums which deal with numbers beyond what he can realize. The mathematical work is therefore arranged on the concentric plan. In the Second Class, the four operations are dealt with in numbers up to 200 ; in the Third, these operations are extended in range of numbers, and also applied to small sums of money ; in the higher classes, the previous work is further extended and more widely applied.

Children Under Six.

It is not necessary to give any formal instruction in Arithmetic to children under six years of age. They may count the pupils present in the class or objects in which they are interested, or count incidentally in connection with the various occupations of the class. They may also play number games and form simple figures by sticklaying and in other ways. But they should not be required to memorize number relations.

The use of Counters.

In the initial stage of teaching arithmetic the activity of the child can be most profitably employed in the observation and handling of counters. By means of these he may realize number, he may find out for himself the relations between a number and those immediately above and below it ; he may analyse the simple numbers and investigate the combinations of numbers ; he may separate groups to find differences, combine equal groups to find products, and divide groups into equal parts.

Work must progress from Objects to Numbers.

When the counters have fulfilled their purpose at any stage they should be laid aside and abstract number dealt with. While numbers are first of all treated in connection with objects, the essential aim of the elementary work is to give familiarity with the number combinations, and to secure *facility and accuracy in dealing with abstract numbers.* The use of objects should therefore not be retained too long. The pupil first thinks in terms of objects which he sees, afterwards in terms of number dissociated from the visible objects, and then applies his notions of number to objects not visible to him, but about which he can think.

If the various progressive steps in the course be skilfully arranged so that only one difficulty or new feature be presented at a time, then *regular and systematic repetition* combined with interesting variation will ensure rapid progress.

Development of the Work, with Concrete Examples for Junior Classes.

Sticks of equal length (2 or 3 inches), such as are used in the Kindergarten exercises, may be employed as units of measurement, the child ascertaining distances in terms of stick lengths. This will lead on to the use of the foot-rule, the foot being first understood, then the division into inches, and at successive stages, the halves, fourths, eighths, and tenths of the inch. The stage at which each new feature will be introduced will depend on the capacity of the pupils to grasp it. The division of groups and the cutting of things into equal parts will illustrate the simple fractions, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, &c., the whole series to $\frac{1}{12}$ being gradually introduced as the pupil's familiarity with larger numbers warrants it. The decimal character of notation may be illustrated with sticks grouped into bundles of hundreds, tens, and units, the pupils first building the numbers up by means of these bundles, and afterwards representing them by figures. In the latter portion of the First Class course, common coins are introduced, and children should, at this stage, merely learn to recognize them and to know the relative values of those that closely approximate one another in value. It is important that the distribution of the various parts of the work in all classes should be in accord with the mental growth of the pupils, and that no new departure should be made until the necessary preliminary knowledge has been acquired. The attempt to crowd too much of the specified work into a short time will lead to confused, half-realised, and unassimilated results, and a merely fictitious progress.

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Concrete Teaching to be continued in Higher Classes.

In the more advanced classes similar principles should be followed. The pupil should know through his senses what a yard, a pound, a square yard, an acre, &c., actually are before he is required to calculate respecting them. He should be frequently called upon to use his judgment with respect to lengths, weights, areas and angle measurement.

The use of Common Signs.

The use of the common signs for the four simple operations should be introduced in the Second Class. At this stage, however, complicated exercises on the use of the symbols should be avoided, their uses in the most elementary applications being sufficient. At a later stage, the pupils should be able to employ these symbols in representing processes used in the solution of concrete problems.

The use of Fractions and Literal Symbols.

In the Fourth Class the use of fractions confined hitherto to the single division, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, &c., is extended to multiples of these divisions. The phrase "common applications" of these fractions indicates that the class is required to realise what these fractions mean, and to make use of them, but is not required to add, subtract, multiply, or divide them. The pupils, however, in being shown by illustration the value of these fractions, will learn the equality of some of them. The use of literal symbols is introduced in Fifth Class, together with the continued use of symbols of operation. This is an elementary introduction to the generalizations of algebra, but should grow naturally out of arithmetical processes. It is not, therefore, to be regarded as a separate section of the mathematical work, nor does it demand that special lessons be devoted entirely to it. It merely requires the expression of the simplest processes in a generalized form by means of literal symbols of quantity combined with the commonest symbols of operation.

The Study of Decimal Notation.

The study of the decimal notation which, in its elementary stages, was commenced by the building up of numbers with objects in the First Class, is continued in the Fifth, with quantities less than unity, the principle of place value of figures with which the pupil should be familiar in dealing with whole numbers being now extended to decimals. The course in Sixth Class embraces the four operations applied to decimals, with special reference to the decimal measures of weight, length, and value in most common use.

Progressive Steps should be Carefully Graded.

Besides the realistic treatment and the application to practically useful purposes here laid down with regard to arithmetic, the successful teaching of the subject requires that the various progressive steps in the course should be carefully graded so that only one difficulty, or one new feature, shall be treated at a time. Where the adult mind leaps over several steps at once, the mind of the beginner must take them one by one, so that in the laying out of the instruction beforehand this minute subdivision of difficulty needs to be kept in view. Especially is this the case in dealing with the elementary mechanical operations. It is essential that a preparatory course of mental exercises should lead up to every new stage in written work.

Setting Out of Work; Amount of Work.

While pupils should be able to make a full orderly written statement of the solution of problems, this should be regarded as an *occasional* exercise, as it is most important that a considerable number of examples should be worked during the lesson period. Nor should time be wasted in the unnecessary use of the ruler and red ink. In the lower and middle classes the lead pencil may appropriately be used for ordinary arithmetical work.

Approximation.

Pupils should be accustomed to make rough mental approximations to the answers to problems before beginning the written solution.

All Problems need not be Worked Out.

Provided that accuracy and speed in mechanical calculation and in symbolical expression have been acquired, the number of problems dealt with in the lesson period may be considerably increased by occasionally refraining from working out every problem to a final result. The work in such cases need only be carried to that stage at which it is clearly shown that the pupil has grasped the problem and the method of its solution. In all classes, however, a sufficient amount of practice in obtaining final results must be given to ensure the maintenance of a reasonable degree of facility in calculation.

Arithmetic: The Treatment to be not Exhaustive but Practical and Thorough.

It will be seen that no attempt is made to treat any section of the arithmetic exhaustively, but only so far as is necessary to enable the pupil to meet the common practical requirements of every-day life. Although not exhaustive, the treatment should be thorough as far as it goes—that is, each process should be intelligently grasped and not be the mere application of a rule. In the framing of exercises, the guiding principle should be that the work in school should retain a close connection with the actual requirements of life outside the school, and in the teaching, behind all the words the pupil uses, there should be a clear conception of the actual thing, or of the actual process, that the words represent. All the operations of arithmetic that do not enter into common usage or refer only to special circumstances may be left for more advanced classes.

Experimental Geometry to lead to Demonstrational.

The object of the simple experimental geometry introduced into the work of the primary classes is to enable pupils to recognize and construct the common geometrical figures, and to become familiar with the most useful properties of these figures and their application to mensuration. These facts are ascertained experimentally, and general inferences are drawn from the observations thus made. But it should be understood that this practical treatment paves the way for a logical treatment of the subject, that while a certain limited range of results is obtainable by observational methods, there are other geometrical truths that can be ascertained only by processes of logical argument, and hence the experimental should lead on to the demonstrational geometry in cases where pupils proceed to courses where this is necessary. While only experimental treatment is possible in the primary work up to the Fifth Class, the higher classes should be prepared to enter upon the reasoning processes required by the proofs in demonstrative geometry.

The following is a detailed course which will determine the range of instruction, and assist the teacher in grading its difficulties:—

First Class—Ages 6 to 7.

Quantity, Number, Form.—Realizing of number by counters in the hands of the children.

Counting objects to 10, afterwards to 20, and to 50.

Recognizing without counting small groups of objects, in twos and threes.

Arranging objects in groups of two, and counting by those groups, 2, 4, 6, 8, advancing by degrees to 30.

Counting by tens to 50.

Combination of two numbers to make totals 2 to 10, and separating these totals into their elements. Memorizing the results.

Numeration and notation to 10.

Addition of two numbers with a total up to 10, and the corresponding subtraction.

Addition of three or more numbers up to a total of 10.

Measurements of lengths by sticks of equal lengths as units.

Use of the divided cube, sticks, and other materials in forming squares, rectangles, and triangles, without defining those terms. Drawing of the shapes thus made. Clockface; hour, half-hour, quarter-hour.

Number games within the above range.

Notes.

By *repeated* exercises with counters and other objects number combinations are memorized and become known in the abstract. Then the counters should be put away, but should always be referred to when a difficulty occurs or an error is made. The counters are to be used for the teaching of every new step.

For numbers beyond 10 each pupil should have bundles of 10 counters, and 10 single counters.

Memorizing should have direct relation to concrete examples.

Sticks of 2 or 3 inches in length will be found convenient for measuring.

Second Class—Ages 7 to 8.

Quantity, Number, Form.—Revision of all previous work.

Realising numbers in tens to 100.

Counting by tens to 100. Counting by ones to 100.

Arranging objects in groups of 2, 3, 4, and 5, and counting by those groups up to 60; thus—2, 4, 6..., 3, 6, 9..., 4, 8, 12..., 5, 10, 15...

Using one bundle of 10 counters, and 10 loose ones to give notions of 11, 12, 13...20, as 10 and 1, 10 and 2, 10 and 3, &c. Analysis of these numbers to give new combinations, the component numbers not to exceed 10.

Addition of any two numbers up to 9 and 9 to be *thoroughly memorized.*

Corresponding subtraction.

Counting by tens 1, 11, 21..., 2, 12, 22..., and so on.

Notion of "times" and "parts."

Constructing and memorizing multiplication tables to 10 times 10.

Mental exercises in the four simple operations to give facility in dealing with numbers.

Notion and use of the fraction $\frac{1}{2}$.

Recognition of the coins, penny, halfpenny, threepence, sixpence and shilling. Relative values of these coins.

Numeration and notation to 200.

Addition and subtraction to 200, single columns in addition not to exceed 40.

Multiplication by numbers 2, 3, 4......10, with products up to 200.

Division by numbers 2 to 10 with dividends up to 200. (See Notes.)

Use of the four signs of operation, and of the sign =.

Use of the foot-rule to measure in feet *or* inches (not feet *and* inches) objects about the school. Simple exercises in addition and subtraction based on these measurements.

Drawing lines of given length in inches.

Estimating with the eye the length in feet *or* inches of objects about the school, and testing the estimates by measurement.

Division of cube into cubes and other retangular solids; counting of edges, faces, and corners; free-sketch drawing of the faces.

Clock face how to read the time.

Notes.

At each new step counters and other objects are to be freely used.

In dealing with numbers 20 to 100 each child should have 9 bundles of 10, and 10 loose counters. In dealing with numbers 100 to 200 he should have also a bundle of 100.

Counters are used to construct the multiplication tables, and to show equality of results, as three fives and five threes. Apply the tables to simple exercises, dealing with a variety of objects.

If the combinations of the simple numbers 1 to 9, are well memorized the children will be able to add any two instantaneously. Until this stage is reached it is not advisable to set examples in continuous addition, but interesting variety in concrete examples is essential.

When the addition combinations are known they should be applied thus:— $6+8=14$, $16+8=24$, $26+8=34$, and so on. The corresponding subtraction should be taught at the same time. The method of adding by completing the tens is not recommended.

The early exercises in subtraction should not involve carrying; thus:— 39–7, 48 – 10, 79 – 20, 48 – 42, 67 – 25.

When carrying is necessary the pupils should work thus:—

```
72      4 from 12, 8,
24      3  „    7, 4.
—
48
```

or by complementary addition, thus :—

4 and 8 are 12,
3 and 4 are 7.

No reference should be made to " borrowing " or " paying back.'

Memorizing the addition and multiplication tables is much more important than working written exercises.

No operations should deal with abstract numbers until the children are first familiar with their use in dealing with quantities of actual things. The pupil should see that they are a means for finding out something that he needs to know about common things before they are treated in the abstract.

Division may be treated in four stages:—

(a) Without remainders, as $18 \div 3$, $84 \div 4$;
(b) Without remainder in the tens, as $97 \div 3$, $189 \div 6$;
(c) Without remainder in the units, as $96 \div 4$, $120 \div 5$;
(d) Without restriction as to remainders, as $173 \div 3$, $128 \div 9$.

The fraction $\frac{1}{2}$ should be illustrated by means of common objects, folded paper, &c.

Third Class—Ages 8 to 9.

Revision of all previous work.

Mental concrete exercises involving the four simple operations within the range of the pupil's experiences, both as to the objects referred to and the extent of the numbers employed.

Counting by groups of 2, 3, 4...9, starting from any given number.

Thorough revision of addition combinations with application to addition in order to secure facility in adding columns of figures to 100.

Construction by the pupil of the "times" tables to 12 times 12; simple factors within the limits of the "times" tables. Memorizing the tables.

Exercises in finding $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$...$\frac{1}{12}$ of given numbers.

Symbols of operation and their use in representing the processes employed n concrete exercises; two symbols of division $43 \div 8$ and $\frac{43}{8}$.

Exercises to give facility in dealing mentally with abstract numbers.

Pence tables and shillings tables (see notes).

Numeration and notation to 10,000. Notation of money.

Written work to be supplementary to the mental and oral work stated above, with the four operations in numbers up to 10,000, multipliers to 100, divisors as set forth in the notes.

Division of Factors.

Use of the coins, florin, half-crown, half-sovereign, and sovereign.

Equivalent values in pounds, shillings, pence, and half-crowns, with simple exercises in relative values.

Simple types of the four operations in money, having a practical application, with multipliers and divisions to 10, as shown in the notes.

Measurement with the yard-stick and foot-rule in yards, feet, inches, and half-inches. Exercises on those measurements, using one denomination. Estimating lengths in yards, feet, *or* inches, and testing by measurement.

Use of set squares and ruler in making lines, squares, and rectangles of given dimensions, in inches only; subdividing these figures into square inches, and determining the area by counting; calculating perimeters.

Notes.

Multiplication. Types of various stages:—300×6, 257×4, 684×10, 79×20, 30, 40...100; 261×13, 14...19; 137×73; $76 \times 5 \times 13$; 29 times 74; find product of 73 and 15; square 37. Products up to 10,000. Use of factors. Simple problems at each stage, making use of multiplication.

Division. Types of long division:—$735 \div 8$; $94 \div 11$, 21, 31...91; $756 \div 92$, 82, 72...12. The examples in long division should be so framed that the trial divisor gives the true quotient. Short division by divisors up to 12. Simple problems involving division within the limits specified.

Reduction of money: shillings to pence, pence to half-pence, pounds to shillings, and *vice versa*.

Stages in addition of money:—(a) pence only (answers in s. d.); (b) pence and half-pence; (c) shillings only (answers in £. s.); (d) pounds and shillings; (e) pounds, shillings, and pence. Practice should be given in adding *two* addends as well as a larger number of addends.

The subtraction, multiplication, and division of money should be similarly graded, and applied to simple practical problems involving one operation.

The exercises in subtraction should include the taking of pence and half-pence from a shilling or shillings, and shillings and pence from a pound or pounds; *e.g.*, 1s. – 3½d., 3s. – 6½d., £1 – 5s. 6d., £7 – 18s., £5 – 16s. 3d. The method used in simple subtraction should be followed in compound subtraction.

Pupils should be trained to express orally in shillings any number of pounds up to £12, and in pence any number of shillings up to 12s.

The pence table should be well memorised; 20d. = 1s. 8d., 24d. = 2s., 30d. = 2s 6d., 36d. = 3s., and so on by tens and twelves. Much mental practice on the intervening numbers is necessary.

Fourth Class—Ages 9 to 10.

Revision of all previous work.

Numeration and notation to six places.

The four simple operations with range of number to six places, multipliers and divisors to 1,000, the divisors being carefully graded from the stage reached in third class; practical applications involving one or two operations.

Mental calculation of prices of dozens and scores, with extension to such numbers as 13 regarded as $12+1$; 23 as $24-1$; 19 as $20-1$; 41 as $40+1$; &c.

The four operations in money with numbers and quantities within the range of ordinary experience. Simple direct reduction of pounds, shillings, pence, and halfpence. Easy money problems involving one operation.

Measures of length (yds., ft., ins.); weight (lb., oz.; then cwt., qrs., lb.; then tons, cwt., qrs.); capacity (gallons, quarts, pints). Reduction and the four operations in these measures, and easy problems involving one operation. (See notes.) Not more than three demoninations to be used in one exercise.

Notion of the fractions $\frac{2}{3}$, $\frac{3}{4}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$, ... $\frac{11}{12}$, with graphical illustration, and common applications of them.

Simple domestic accounts and business transactions.

Measurement of distances about the school premises both indoors and out-of-doors, and simple exercises based on those measurements. Estimating distances and testing by measurement.

Determination of the simple properties of the rectangle and parallelogram by experiment. Relation of parallelogram and triangle to the rectangle, by use of cardboard or other models; mental exercises in finding area of rectangle, parallelogram, and triangle, in square inches.

Angles of set squares, and other angles formed from these 15°, 75°, &c.

Use of ruler, set squares, and compasses, in construction of triangles with given sides and given angles, parallelograms of given sides and angles, and circles with given radius (the given angles being limited to those that can be formed from the set squares).

Making plans of distances and rectangular surfaces to scale of 1 inch to the yard or foot.

Notes.

The first treatment of weights and measures should be concrete. The pupils should handle the actual weights (pound, half-pound, ounce, &c.) and the actual measures (gallon, pint, &c.), use them freely in weighing and measuring, and work mental exercises on their relative values.

In reducing pounds to ounces and ounces to pounds, they should be trained to multiply 16 by 2, 3, 4, . . . 10 rapidly without resort to writing; and so with 28 when dealing with quarters and pounds. Similarly they should learn to multiply mentally any number of two digits by 2, 3, . . . 10. This will prove very helpful in long division.

The exercises in weights and measures should be graded in a manner similar to that prescribed for money operations in third class.

Multiplication of money, weights and measures, by such numbers as 47, 236, &c., should be performed in one line, and not by using 10 as a factor.

Fifth Class—Ages 10 to 11.

Revision of all previous work.

Notation and numeration to be extended to nine places.

Tables of length and area; relation of the chain to the link, yard, rod, furlong, mile, and of the square chain to the acre. Table of weight, including the stone. Table of capacity, including the half-pint, peck, and bushel. Table of time; calendar year, calendar month, day, hour, minute, second. Mental exercises on the practical use of these tables. Reduction. Long tots in simple and compound addition.

Problems involving reduction of money, weights, and measures.

Domestic and mercantile transactions dealing with value, length, area, weight, capacity, and time, involving one or two operations.

Abbreviated methods of mental and written calculation in common use. (See notes).

Simple practical exercises on the fractions—halves, quarters, and eighths; thirds, sixths, and twelfths; fifths and tenths; with graphic illustrations.

Equivalent forms, as $\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$, &c., shown by concrete examples.

Decimal notation; realisation of tenths and hundredths. Expression of simple fractions as decimals and percentages.

Exercises on values as expressed by vulgar fractions, decimals, and percentages.

Simple practice. (See notes).

Elementary problems worked by the unitary method.

Mental and written calculation (based on actual measurement with foot-rule, yard-stick, or chain) of areas of rectangles, triangles, and parallelograms. Drawing of these forms to scale of 1 in., $\frac{1}{2}$ in., $\frac{1}{4}$ in., $\frac{1}{8}$ in., and $\frac{1}{10}$ in. to the to the foot, yard, or chain. Continued study of the properties of these figures experimentally. Drawing these figures with given sides and angles, using protractor and compasses. Use of the protractor in measuring angles, and constructing figures with angles outside the range of the set squares.

Using compasses and ruler to bisect lines and angles, and to make angles equal to given angles.

Oral statement of the processes employed in the arithmetical work. Substitution of letters for numbers and quantities in simple problems.

Notes.

Abbreviated Methods.—Examples: 35 at 3d. (3d. = $\frac{1}{4}$s.); 27 at 6d., 1s. 6d., &c. (6d. = $\frac{1}{2}$s.); 293 at 6d. (6d. = £$\frac{1}{40}$), and so on with 8d., 2s. 6d., 3s. 4d., &c.; 12s. 6d. (5 half-crowns), &c.; 39 at 1s. 11d. (1s. 11d. = 2s. − 1d.); 17 at 19s. 10d. (£1 − 2d.).

Children should be encouraged to discover and apply such short methods.

Such units of measurement, as a yard, rod, chain, square yard, square perch, square chain, rood, and, where possible, an acre, should be marked out in the playground and frequently referred to.

Fractions.—Graphical illustrations of these should not be confined to lines; rectangles should be used also.

Simple Practice.—Types: (a) One aliquot part, as 373 at 2s., 195 at 10s., and so on; (b) two aliquot parts, as 214 at 15s., at 11s., &c.; (c) 59 at £1 2s., at £3 5s., &c.; (d), three or more aliquot parts, 1,620 at 11s. 6d.; and so on.

Complicated exercises, such as 2397 at £7 18s. 11$\frac{1}{2}$d. should be avoided.

Sixth Class—Ages 11 to 12.

Revision of all previous work.

Mental and written exercises in simple and compound rules as for fourth class, but of wider range, though still with a practical bearing. Problems based on the commercial columns of a newspaper. Use of abbreviated methods where applicable. Extended use of simple fractions, decimals, and percentages in the solution of practical problems. Four operations in vulgar fractions (see notes) and terminating decimals. Cancelling.

Decimalization of money by easy methods.

Averages, Compound Practice, Ratio and Simple Proportion.

Percentages applied to interest, ordinary retail discount, profit and loss; interest to be calculated on whole pounds, and for years or months only.

Equivalent forms of expressing ratios, such as $\frac{1}{4} = \cdot 25 = 25\% = 5$s. in the £.

Method of keeping cash accounts. Balancing accounts. Cheques, Bank Notes, Money Orders, Postal Notes, Savings Bank Passbooks, Deposit Slips.

The notion of volume; models of cubic inch, cubic foot, cubic centimetre. The relation of the cubic foot to the cubic inch, and of the cubic metre to the cubic centimetre, &c.

Volumes of rectangular solids; measurement of sawn timber and (in timber districts) of logs.

Draw parallels and perpendiculars with set squares.

Make a hexagon and octagon.

Inscribe square, hexagon, and octagon in a circle.

Construct an eqilateral triangle with sides of given length.

Construct an isosceles triangle (a) with given base and angle, (b) with given base and height.

Divide a straight line into any number of equal parts.

Find properties of parallel lines by investigation.

Make patterns based on squares, hexagons, and octagons.

Relation of diameter to circumference of circle, with practical applications.

Area of irregular quadrilateral. Area of circle.

Easy exercises in calculating areas of figures already studied, except the hexagon and octagon.

More advanced practice on the rectangle and triangle.

Rates of movement.

Scale drawing continued, with application to simple problems in height and distance, time, direction, area. Use of the eight chief points of the compass in some of these problems. Reading maps and plans drawn to scale.

Representation by symbols of the processes used in the solution of problems. Evaluation of formulæ. (See notes.)

Notes.

The simplification of complex fractions is not required. The fractions dealt with should be composed of small numbers, common denominators being found mentally.

Examples of formulæ to be evaluated :—

(1) Area of rectangle : $A = lb.$

(2) Area of triangle : $A = \frac{bh}{2},$

(3) Circumference of circle : $c = d\,\pi = 2r\,\pi,$

(4) Area of circle : $A = r^2\,\pi = \frac{d^2\,\pi}{4},$

(5) Area of ring : $A = (R^2 - r^2)\,\pi = \frac{(D^2 - d^2)\,\pi}{4}.$

(6) Falling body : $S = \frac{gt^2}{2}.$

The formulæ for finding the volumes of dams and heaps of road metal might also be used.

Seventh Class—Ages 12 to 13.

Revision of all previous work in all branches of mathematics.

Arithmetic—

Long tots and cross tots.
More advanced exercises in percentages, profit and loss, &c.
Tests of divisability by 2, 3, 4, 5, 8, 9, 11.
Practical applications of decimals, proportional parts.
Simple interest :—Finding rate, principal, time.
Commission, trade discount.
Methods of approximation.
Dollar and cent, franc and centime.

Mensuration (optional for girls).—Metric system, metre, decimetre, centimetre, millimetre, kilometre.

Square root and its simple applications in mensuration.
Study of the right-angled triangle.
Areas of irregular rectilineal figures by dividing into triangles.
Distances and areas calculated from parish and other maps, and from plans drawn to given scales.

Geometry (optional for girls).—Draw a perpendicular to a straight line from a given point in or outside the line (using ruler and compasses).

Construct, in simple cases, triangles and quadrilaterals from sufficient data.

Use of the proportions 3, 4, 5, and 5, 12, 13 in constructing right angles with practical applications.

Algebra (optional for girls).—Continued application of symbols to arithmetic and mensuration.

Construction and use of simple formulæ.
Derivation of the converse of a formula ; *e.g.*

$$\text{if } A = \frac{bh}{2} \text{ then } b = \frac{2A}{h}, \text{ and } h = \frac{2A}{b}.$$

Substitution of numerical values.

Further exercises in simple equations with numerical coefficients, and easy practical problems based thereon.

Use of brackets as applied to practical problems.

The four rules, limiting multiplies and divisors to monomial and binomial expressions.

Factors of expressions of the first and second degrees, and their application to arithmetic; as, $87^2 = (87 + 13)(87-13) + 13^2$.

Eighth Class—Ages 13 to 14.

Revision of all previous work in all branches of mathematics.

Arithmetic.—Customs duties, specific and *ad valorem*.

Rates, taxes, commission, promissory notes.

Elementary exercises in debentures, shares, stock, profits, dividends.

Statistics published in the daily press and in official year books; making graphical illustrations of such graphs.

Contracted methods in multiplication, division, and extraction of square root to a small number of decimal places.

Use of logarithmic tables in simple calculations; application to compound interest.

Metric system: weight and capacity; model of a litre; relation of units of length, weight, and capacity.

Mensuration (optional for girls).—Concentric circles. Volume and surface of cylinder, pyramid, cone, sphere; modelling of these figures, with the exception of the sphere. Volume of truncated cone or pyramid with practical applications (road metal, dams, &c.)

Geometry (optional for girls).—The fundamental notions of solid, surface, line, straight line, point, angle, length, area and volume, congruence and equality of area or volume.

Divide a straight line in given proportions.

Construct regular figures of 3, 4, 6, and 8 sides in or about a given circle.

Gradient of a road.

Similar triangles applied to the measurement of heights and distances.

Drawing simple plans and elevations to scale.

Experimental investigation of the simple properties of a circle.

Algebra (optional for girls)—

H.C.F. and L.C.M. by factors.

Simplification or easy fractions.

Truth and interpretation of the identities—

$$a(x + y) = ax + ay;$$
$$(a + b)^2 = a^2 + 2ab + b^2;$$
$$(a - b)^2 = a^2 - 2ab + b^2;$$
$$a^2 - b^2 = (a + b)(a - b).$$

Easy equations with two variables of the first degree; numerical coefficients only.

Practical problems involving such equations.

Easy simple equations with literal coefficients.

Continued construction and application of easy formulæ.

Graphs: plotting of points, graphs of linear functions; graphical.

Solution of simple simultaneous equations and arithmetical problems.

Notes.—Seventh and Eighth Classes.

In these classes, as in the junior classes, the practical application of arithmetic should be kept in view. In this respect, the commercial columns of the newspaper, market reports, statistics, and the ordinary requirements of trade and business will furnish the basis for much of the instruction. Commercial operations, with exercises in exchange into the coinage of France and America, and questions relating to share transactions and Government stock, together with forms of ordinary business accounts and documents used in commercial and banking transactions, should receive attention.

Practice in the metric system of weights and measures will be given, and the use of a table of logarithms introduced. In the arithmetic course, the object should not be the solution of completed problems, but the application of principles to circumstances that are likely to occur.

The mensuration of surfaces and solids with exercises in measurements and scale drawing will be extended, the course in algebra continued, and when a course of physical science is taken up it will furnish exercises in mathematical work in a practical form. The making of statistical graphs should also be undertaken.

In girls' departments, where a wide range of mathematical study is not so important as is the case with boys, and where studies of domestic concern claim particular attention, less time should be devoted to mathematics. While a progressive course in the several branches is maintained throughout, the extent of the work will be more limited, and the application of it will deal with calculations that will prove more useful to girls. Algebra, mensuration, and geometry are optional subjects for girls, being taken up when required by them for a special purpose.

CIVICS AND MORALS.

First and Second Classes—Ages 6 to 8 years.

1. Stories from the authorized Scripture books.

2. Bible stories suitable for young children, *e.g.*, David, Samuel, Ruth.

3. Stories and fables with a moral purpose. Moral attributes which lie at the foundation of home and school life, such as truthfulness, obedience to parents, kindness to playmates, brothers, sisters and parents, politeness, gentleness, control of temper.

4. Greetings at home and at school, politeness in question and answer. Opening and closing hymns.

5. Care of pet animals, their food, drink and habits—feeding birds both wild and tame.

6. Simple proverbs. Short pieces of poetry suitable to this course (to be selected from the "Suggestive List"). Australian Legendary Tales. Classic Nature Myths. Stories of other lands, from legend and history.

Third Class—Ages 8 to 9 years.

1. Additional stories from the authorized Scripture books.

2. Other easy Bible stories.

3. Stories of moral value illustrating self-help, consideration for others, ways of showing helpfulness to others, unselfishness, truthfulness in word and deed, punctuality, kindness.

4. Courtesy and clearness of speech, conduct in the street, in trams, trains, and other vehicles, and in all public places, care of property, return of found articles, fair play in games, unwisdom of making a fuss over trifling disappointments or injuries.

5. Simple proverbs. Short poems of moral value.

6. Stories from Greek and Roman history, told to arouse noble feelings.

Fourth Class—Ages 9 to 10 years.

1. Authorized Scripture Lessons, O.T., No. 1 Lessons 1 to 12. N.T., No. 1 Lessons 1 to 12—to be read once a week.

2. Stories from history and biography, stimulating to self-reliance, facing difficulties, benevolence, helpfulness towards the weak, aged, and unfortunate; love of country.

3. Good manners in the home and public places. Regard for property. Temperance.

4. Simple proverbs and poems.

5. History.—Create an interest in history by—
   (a) The realization by pictures of the social life, industries, and institutions of to-day.
   (b) Simple short descriptions of Town, Hospital, Factory, Steamer, Railway Station, Post Office, and so on, with special reference to local history. How these institutions originated and why they are maintained.
   (c) Stories of early Australian Settlement—Captain Cook, Early Settlement and Expansion; Captain Macarthur and the Wool Industry; Crossing of Blue Mountains; Captain Sturt's early explorations; Hume and Hovell; Burke and Wills.
   (d) Stories from British History—Arthur and his Knights; Boadicea and the Romans; Gregory and the Slaves; Alfred and the cakes; Canute and the Courtiers; Hereward and the Normans.

Fifth Class—Ages 10 to 11 years.

1. Authorized Scripture Lessons, O.T., No. 1, Lessons 13 to 30. N.T., No. 1, Lessons 13 to 27—to be read once a week.

2. Lessons on duties to parents, relations, friends and oneself. Industry, courtesy, patriotism, and temperance. Stories of heroism and humanity selected from history and literature; classic tales of Greece and Rome.

3. *History*:

(a) Pictures illustrating dress, activities, social customs of the 16th, 17th, and 18th centuries.

(b) Stories representing periods of activity as:—Colombus; Heroes of the Sea; The Revenge; The Pilgrim Fathers; The Ironsides; London in the time of Queen Anne; The Union Jack; Clive and his times; Wolfe and his work.

Search for the Unknown South Land (illustrated by charts, pictures of ships, dress, &c.); The Spaniards; Tasman; Dampier; Cook; Cook's First Voyage (in some detail); Flinders and Tasmania; With Flinders around Australia; Capt. Sturt's later explorations; Allan Cunningham; The Overlanders; The Gold-diggers.

4. Local history—Current events.

5. *Civics.*—The Postman, the Policeman, Health Officers, the Municipal or Shire Council and their officers.

6. Proverbs and poetical selections suitable to the course.

Sixth Class—Ages 11 to 12 years.

1. Authorized Scripture Lessons, O.T., No. 2, Lessons 31 to 44. N.T., No. 2, Lessons 1 to 12—to be read once a week.

2. Lessons and stories on moral courage, pride in thorough work, use of leisure time; value of hobbies; the earning of a living; self-improvement on leaving school; gratitude to parents; thrift; the use and abuse of money; good manners; temperance; the golden rule.

3. *History*:—

(a) Time chart and pictures illustrative of the Roman period, the Saxon Period, the Feudal Period.

(b) A Series of lessons on "history-wholes."

*The subjects for 1916 will be those stated hereunder.** *The topics will be changed each year, the lists for 1917 and subsequent years will be published in the January issue of the Education Gazette.*

What the Romans Did for Britain.
How England became one Kingdom.
An English Village of Long Ago: How the English Governed Themselves.
How the Normans Ruled England.
The Third Crusade.
Norman and Saxon: One People, One Destiny.
Life in a Town and Life on a Manor.
The Beginnings of Parliament.

The Peasant and the Landowner.
The New World: New Lands and New Ideas.
The Reformation in England.
The Birth of an Empire. (Raleigh, John Smith, Pilgrim Fathers, Georgia, &c.)
Champions of Law and Liberty—Pym, Hampden, Cromwell.

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* The divisions made suggest the subdivision of work for each quarter of the year.

Men who Made the Empire. (Chatham, Wolfe, Clive, Hastings.)
"No Taxation without Representation."
The Union Jack: What it stands for. (1) Ireland, (2) Scotland.
How Nelson Protected the Empire.
How Wellington Defeated Napoleon.
Great Inventors: How they Changed England.
Improvements in Farming.
Factories and Mines. (Shaftesbury and Trades Unions.)
"Peace hath her Victories." (Wilberforce, Howard, Cobden, Livingstone, General Gordon.)

British Dominions and their Heroes.
- (a) India, Bentinck and Roberts.
- (b) Canada and Lord Durham.
- (c) Australia and Wentworth.
- (d) South Africa and Cecil Rhodes.
- (e) Egypt, Lord Cromer and Kitchener.
- (f) The Social Condition of the People.

Australia (in its time and place)—Sturt, Hume and Hovell, Leichhardt, Parkes.

4. *Civics.*—A Public Meeting, Progress Association, Shire Council, Magistrate and Judge, Member of Parliament, State and Federal rates and taxes, State Governor, Governor-General, The King.

5. Proverbs, quotations, and short poetical extracts of ethical value.

Seventh and Eighth Classes—Ages 12 to 14 years.

1. Authorized Scripture Lessons: O.T., No. 2, Lessons 45 to end of book. N.T., No. 2, Lessons 13 to end of book.

2. History and Civics to be taken in accordance with course of instruction for Superior Public (Day Continuation) School, *q.v.*

In these classes, the work is to be done chiefly by means of text-books.

Indirect Moral Teaching.

Moral teaching should permeate the whole management of the school, and be embodied in the methods of discipline, in the treatment of children by the teacher, in the proprieties and manners required from the children, and in the example of the teacher. The moral influence of the teacher should be felt in a special manner in the freedom of the playground.

Direct Moral Teaching required.

Apart from the indirect influence of school discipline in the formation of character, teaching of a direct kind is needed so that the child may form ideals of conduct and be stimulated to act in accordance with them. In the early stages, this is best done by stories with a strong human interest.

Scripture Lessons to be read.

Scripture Lessons.—The Syllabus provides for the systematic reading of the authorized Scripture Lessons by all pupils who are sufficiently advanced to be able to overcome mechanical difficulties of the text. It is important that this course should be regularly followed. Pupils whose parents have conscientious objections should be exempted from these lessons.

Abstract Moral Teaching not required.

It is not intended that each of the subjects named in the Syllabus should be programmed for special treatment; many of them might be referred to as opportunity offers during the course of other lessons. The work as set down represents a range from which a suitable amount of material may be chosen for each half-year's work. The more difficult or unusual should be treated in short lessons of about fifteen minutes' duration. The experience of the teacher will guide him as to the best time and manner in which to impart these lessons. As abstract moral teaching fails to excite much interest in the minds of children, it will be found an advantage to enforce the principles of such teaching by means of examples taken from history, biography, poetry and fiction, or by means of anecdote, allegory, or fable. Temperance should form a subject for definite instruction.

Use of Stories in Moral Teaching.

Some of the stories will carry a direct moral and afford the teacher an opportunity of teaching specifically what is right as distinct from what is wrong in some phases of conduct. As the child grows in years, the reasons that underlie right conduct, whether in its personal, social, or civic aspects, should enter into the instruction. Other stories and narratives will carry no formulated moral, but by their indirect influence on the pupil will help to form his standard of conduct.

Civic Morality.

Moral instruction is also bound up in the teaching of civics. The duties which the individual owes to society, the regard for public interests and public property, the response to the demands which the State makes upon the individual citizen—these form a large part of that civic morality, the elements of which may be taught in the school and form the foundation of a true citizenship.

General Treatment of Civics.

Special lessons on civics should first deal with whatever function of government may be illustrated in the school locality. The starting point will necessarily vary in different localities, but from the local conditions the course of instruction will be gradually extended in the higher classes to embrace the various representative institutions—Municipal, State, and Commonwealth—the administration of justice, public taxes, the means of defence, and the responsibilities which these entail on the citizen. No exhaustive treatment of these subjects should be attempted, but, as in the other branches of school instruction, the range of the teaching will be limited by the powers of the pupils to assimilate the matter presented. In the upper classes, some civic functions can be illustrated by examples carried out by the pupils themselves. The teaching of civics should be closely associated with the teaching of history—in fact, should be treated, not as a separate subject, but as a section of the history course.

Aim in Teaching History.

The aim of the teaching of history is not the loading of the memory with a host of unrelated facts and unimportant dates capable of being reproduced for show purposes. The period of school life is, moreover, too short to admit the treatment of history in its complete form. The aim is rather, by a selection of topics, to give such an account of the past as will enable the pupil to have some insight into the present, and furnish him with noble ideals of life and character upon which he may model his own. Such a conception of the aim involves wide and thoughtful reading on the part of the teacher, and ability to realise vividly the ideas and ideals of past times, and the power of graphic narration.

Aids in Teaching History.

Few lessons in history can be properly given without constant reference to geography. In the lessons suggested, the routes of the explorers and voyagers should be closely followed on maps or blackboard sketches. Towards making the study of history interesting and realistic much aid will be derived from photographs and pictures, from fac-similes of old documents, from consideration of existing institutions, laws, and customs, and from the reading of historical tales, biographies, and books of travel, in regard to which the school library will be found of prime importance. The close relation of history to literature should not escape notice. Poetry, songs, old ballads are capable of being used effectively in the teaching of history. Local anniversaries may form convenient points of departure for instruction in Australian history.

Credit will be given for illustrative work, for the linking-up of history and geography, for connectedness of subject-matter, for training the pupils to discover facts for themselves, especially those bearing on the connection between the past and the present, and for the cultivation of an interest in historical reading.

In dealing with work of exploration and discovery, it is expected that the treatment will be such as to give pupils a clear idea of the part studied, and also a desire to know how the remaining portion was opened up.

Literature in History Teaching.

Teachers are often able to add to the vividness and interest of their History lessons by introducing to their pupils' notice poems, ballads, or short prose passages of high literary value. A suggestive list of suitable historical poems is here quoted. It is not by any means exhaustive:—

Agincourt (Drayton).
Arthur and Hubert (Shakespeare).
Battle of Naseby (Macaulay).
Boadicea (Cowper).
Boot and Saddle (Browning).
Battle of Baltic (Campbell).
Boston Tea Party (Wendell Holmes).
Burial of Sir John Moore (Wolfe).
Canute and the Tide (Thackeray).
Caractacus (Barton).
Charge of the Light Brigade (Tennyson).
Drake's Drum (Newbolt).
Death of Wellington (Tennyson).
Eve of Waterloo (Byron).
Home Thoughts (Browning).
He never smiled again (Mrs. Hemans).
If I should die (Rupert Brooke).
Jacobite's Exile (Swinburne).
Lord General Cromwell (Milton).
Pipes of Lucknow (Whittier).
Private of the Buffs (Doyle).
Pro Patria (O. Seaman).
Passages from "Henry V" (Shakespeare)
Scots wha hae (Burns).
Song of the Bow (Conan Doyle).
The Curfew Bell (Thorpe).
The Revenge (Tennyson).
The Armada (Macaulay).
Trelawney (Hawker).
Ye Mariners of England (Campbell).

GEOGRAPHY.

First Class—Ages 6 to 7.

1. Graphic representation of sky changes (with coloured discs or otherwise).

2. Modelling of geographical features of the locality in sand, plasticine, plaster of Paris, or other suitable material.

3. Talks about the animals and plants of the locality.

Second Class—Ages 7 to 8.

1. Work of previous year continued and extended.

2. Noting obvious effects of seasonal changes.

3. Descriptions of the life of children in other lands.

Third Class—Ages 8 to 9.

1. The notion of direction—the points of the compass, and how to find them—direction of known places from the school—direction of wind by observing the wind vane.

2. Observation and record (in very simple form) of—

Weather—hot, warm, cool, cold, rainy, dry, cloudy, windy.

Clouds—simple names.

3. The forms of land and water studied from observation of surface features of the school locality—hill, valley, plain, river, lake, bay, waterfall, &c., as far as these occur. Geographical terms applicable to them.

4. Modelling the locality in sand or other suitable material.

5. How mountains, rivers, lakes, bays, and towns are marked on a map.

6. Practice in reading the map of Australia—States and capitals.

7. Talks about the life of people in other lands—about the common things we use and the lands from which they come.

Fourth Class—Ages 9 to 10.

1. Continue and extend the work of previous class.

Continued study of the geographical features of the school locality, and the operation of natural forces (wind, rain, running water, &c.) as illustrated by them.

Surface features—relief and drainage :—

(a) the hills in the locality—slopes and their character as to length, steepness, and direction—altitude : relative to adjacent surfaces—to the sea level—compared to trees, tall buildings, &c.

(b) Direction and length of ranges.

(c) Special features : cliffs, character of rocks, vegetation.

(d) Drainage : the hills as watersheds.

(e) Soil.

Study valleys and plains in the same way. (6 weeks.)*

2. Extend the work to the whole surrounding district in a similar way (4 weeks.)*

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* NOTE.—Periods, thus stated, are inserted to suggest the relative range of subject-matter to be taken in each case. It is not intended to indicate that so many consecutive weeks shall be spent on each topic, but that such a proportion of time might be spent upon it within the year.

3. Modelling of surface features, in sand or other suitable material.

Plans of school, locality, and district.

Representation in relief of locality and district.

Reading of maps—features represented—direction, and estimate of distance (from map scale). (5 weeks.)*

4. Observing and recording simple meteorological phenomena and seasonal changes. At the end of each month the pupils should write a summary of the results thus recorded. (4 weeks.)*

5. A general study of Australasia (in outline only).

(a) States—railway and sea communication—capitals.

(b) Physical features—Coast Districts—Eastern Highlands—Central Lowlands—Western Tableland—River Systems.

(c) Chief commercial products and industrial activities, associating with them the districts or centres of production and industry—chief towns.

(d) Tasmania, New Zealand, New Guinea, and Pacific Islands connected with or trading with Australia. (20 weeks.)*

6. Constant use of map of Australasia.—Illustrative mapping by teacher and pupils. (4 weeks.)*

7. Simple talks on the earth as a sphere—its motions; equator. (1 week.)*

Fifth Class—Ages 10 to 11.

1. Review of the work done in previous class. (2 weeks.)*

2. Systematic study of the whole surrounding district, including physical features, roads, railways, towns, climate, productions, industries, trade, &c.

Some study of the relations between these geographical factors. Emphasize the productive occupations of the district—agricultural, pastoral, mining, manufacturing, commercial, and as far as possible lead the pupils to understand the various modes of life of the people. (6 weeks.)*

3. Extend the work to the larger centre with which the district is commercially and socially connected (Sydney, Melbourne, Adelaide, Brisbane). (3 weeks.)*

4. Study of New South Wales in regular lessons throughout the year—to be accompanied by memory mapping of the chief parts.

(a) Physical features—the three natural divisions, and their chief characteristics—the Dividing Range as a watershed—drainage—trunk railways—chief towns.

(b) The Special Districts (Hunter River District, New England, North West District, North Coast District, Riverina, Monaro, &c.)—production and industry—means of communication—climate, and special conditions affecting climate—various modes of life of the people.—Illustrative mapping. (20 weeks.)*

5. Shape of earth simply treated—distribution of land and water masses with constant use of the globe—poles and equator—parallels and meridians, their use in determining position. (4 weeks.)*

6. Further observing and recording simple meteorological and seasonal changes and monthly summarising of results recorded. (3 weeks.)*

7. Globe, map and picture study of Europe. (3 weeks.)*

8. Outline study of Europe. (3 weeks.)*

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* NOTE.—Periods, thus stated, are inserted to suggest the relative range of subject-matter to be taken in each case. It is not intended to indicate that so many consecutive weeks shall be spent on each topic, but that such a proportion of time might be spent upon it within the year.

Sixth Class—Ages 11 to 12.

1. Review of the work done in previous classes. (4 weeks.)*

2. Further study of Europe :—Relief and drainage, form and size, climate, distribution of population, states and cities, industrial activities, interchange of commodities. (12 weeks.)*

3. Study of the other continents in broad outline—associating with them the products that Australia imports directly from, or exports directly to, them—ordinary trade routes.—Memory mapping of places studied. (10 weeks.)*

4. The British Empire—names and location of its chief parts. (4 weeks.)*

5. Incidental geography, as associated with important current events, with free use of atlases and newspaper maps. (5 weeks.)*

6. Evaporation and condensation—clouds—effect of mountains in forming clouds (in districts where such observational work is practicable). (3 weeks.)*

7. Shadow stick—Varying Length of Day—Motions of the Earth—Latitude and Longitude—Standard Time and Local Time—Meridians and Parallels.

Determination of Latitude at the Equinoxes—Zones on the Earth's surface —Nature of their Climates.

Use of principles to anticipate climates and productions leading up to ideas of trade—Interchange of surplus products. (6 weeks.)*

Seventh and Eighth Classes—Ages 12 to 14.

1. Review of the work done in the previous classes. (4 weeks.)*

2. British Empire in reasonable detail.—The United Kingdom (physical features, climate, productions, industries, trade, people), Canada, South Africa, India, Mediterranean possessions, outlying portions of the Empire similarly treated. (20 weeks.)*

3. Mapping; memory mapping of countries studied to illustrate points and to fix facts in the memory—plans and maps drawn to various scales. (5 weeks.)*

4. Further study of commercial routes throughout the Empire. (5 weeks.)*

5. Observing and recording weather and seasonal changes. (5 weeks.)*

Interchange of records between schools situated so as to exemplify the influence on climate (1) of the sea, (2) of altitude (3) of remoteness from the sea.

Comparison of newspaper records of temperature of Brisbane, Sydney, and Hobart, to illustrate the effects of latitude.

6. Incidental Geography continued throughout the year, associated with important current topics—free use of atlases and newspaper maps. (5 weeks.)*

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* Note.—Periods, thus stated, are inserted to suggest the relative range of subject-matter to be taken in each case. It is not intended to indicate that so many consecutive weeks shall be spent on each topic, but that such a proportion of time might be spent upon it within the year.

GEOGRAPHY.

Groundwork of Geography to be learnt from Pupil's Surroundings.

The groundwork of geography is laid in the infant school. Just as the pupils have gained their first knowledge of plants and animals by actual contact with them as living things in relation to their surroundings, so also their introduction to geography should consist in a close and attentive study of the locality in which they live. Here will be ample opportunity in most, if not in all, schools of incidentally correlating these two branches of Nature Study. The best, as well as the most interesting, method of obtaining an accurate knowledge of the geography of a country is to travel through it. The child has travelled over his little world again and again. With this little world, the only one that has so far come within the child's experience, a beginning should be made. All its varying features as they present themselves—hill and valley, plain, creek, and river, sea and bay, rock, beach, sand and pebble—are to be noted and carefully described by the pupils. As far as possible they should be led to find out for themselves the part played by each in giving the earth the aspect with which they are familiar.

The pupils should also be led to see the influence of local physical features on the ordinary life of the people, *e.g.*, dwellings near a supply of fresh water, precautions against floods, land selected for farming or for pasture, the relief of the land determining position and direction of roads and of railway, use made of water carriage, &c.

Also the effect of local physical features as modifying climate, why stock camp on the hills in winter, &c.

Modelling Recommended.

Modelling (in sand or plaster of paris or some plastic material), and drawing, at once suggest themselves as valuable aids in giving the pupils a permanent mental picture of what they have observed. Geography thus becomes a realistic study which begins by giving the child clear ideas of the world as he sees it round about him. On this foundation the teacher proceeds to build knowledge of the world that is at present outside the child's experience.

Pictures are also of great use in helping the class to get as vivid a conception as possible of what geographical features are really like.

Following in imagination the wool, wheat, or other local products to their destination, and the holiday trips of parents or pupils to the larger centres (Sydney, Melbourne, Brisbane, Adelaide), will lead to a conception of Australia as a whole, and its political division into States. The work should then be extended to include Tasmania, New Zealand, New Guinea, and the Islands connected with or trading with Australia.

Playground Relief-maps Recommended.

Maps in permanent relief, in the playground, will be useful aids. They should, when possible, be of considerable size. The pupils should assist in their construction ; the older ones will, in this way, receive valuable lessons in the care and thought necessary for accurate representation, according to the scale chosen. Such maps should not be overloaded with detail. Australia New South Wales, Sydney Harbour, and the school district, are specially suited for this treatment. Paper pulp will be found excellent material for making relief maps for indoor lessons.

Drawing of Simple Plans and Sections.

The first lessons in plan drawing should be of the simplest character. The pupils may begin with plans of simple rectangular objects in the school-room, then the room itself, afterwards the playground, and finally the locality, aided with measurements obtained by means of the plane-table and sight-ruler. The pupils having learned the cardinal points in Third Class may now be taught in their plan drawing the usual method of representing these points on paper.

The idea of a vertical section will best be given by cutting through models of some geometrical solids, such as a cube, parallelopiped, cylinder, cone, and sphere. Then a model of a hill or other geographical feature may be treated in a similar manner.

Use of Thermometer, Barometer, and Shadow-stick.

Pupils should learn to read the thermometer and barometer, and to observe by means of the shadow-stick the altered relative positions of earth and sun during the year. It is neither necessary nor desirable that they should understand the principles of the thermometer and barometer before they begin to put them to practical use. By means of the shadow-stick the line of the geographical meridian may be ascertained with reasonable accuracy. A permanent record of it may be made after a few trials, by letting into the ground a 6-inch board set edgewise. At the equinoxes of March and September the approximate latitude may be calculated. The upper classes should take an active share in this and all similar work. The observation and record of temperature and seasonal changes, the varying height of the sun at noon as indicated by the shadow-stick, and the increasing or decreasing length of the days, will form material on which to base lessons on the forces at work in giving to climate its general character.

More Advanced Work.

The following lessons should be based upon the shadow-stick records—standard time and local time—the equator and poles, the tropics and polar circles—climatic zones—motions of the earth.

Weather records should be kept in each class. In the upper classes accurate records are made and should be permanently preserved for future reference. Monthly seasonal and annual averages should be made and compared with the preceding averages. The connection between wind and rain should be observed, and the influence of change in air pressure on rain, wind, &c., noted. The cause of such influence might be investigated as far as possible.

Weather records should be exchanged with schools approximately in the same latitude but differently situated, *e.g.*, on the coast, some distance inland, on the tableland, in the interior, so that the influence of altitude and situation with regard to the sea might be noted. Similarly newspaper daily records of temperature in Capitals in different latitudes should be compared so as to discover the influence of latitude on climate. Any special climatic phenomena should be noted, and accounted for as far as possible.

An account of the work done in these directions should be preserved as a permanent school record.

Incidental Geography.

Special attention should be given to important current events. In this work and in the school work generally, atlases and newspaper maps should be in constant use.

Mapping.

The geography lessons should be illustrated by sketch maps only. The points of the lessons should be recorded on them, and if the maps are sketched on brown paper they should be kept during the year for purposes of revision and reference.

Memory mapping by the pupils should be frequently used to illustrate particular points and to fix places in the memory.

Trade.

Imports and exports should be studied in the first instance in the locality. The destination of local surplus products should be discovered, The articles in the school, in the home, and in the shops, afford material for inquiry as to their source of production, whether at home or abroad. Thence the work will extend to cover the general imports and exports of the Commonwealth.

Where opportunity offers a visit to a neighbouring factory will result in useful knowledge being gained by the senior pupils. The knowledge thus gained should be recorded by the pupils and preserved as a school record.

The Scope of the Course in Geography.

In the scheme of instruction thus outlined, geography involves not merely a description of the earth's surface, but also man's place upon it, its effect upon his mode of life, his relations with his fellowmen, and his power to modify its physical conditions so as to minister to his needs.

NATURE-STUDY.

It is not desired that any teacher should undertake all the work outlined in the following courses in Nature-study, School Gardening, and School Agriculture. A selection should be made suitable to his locality and general conditions, and to his own ability to handle the work successfully. Originality and initiative shown in any school will be warmly encouraged. It is desired, however, that the general aim of each department of the work shall be kept steadily in view. An ill-kept and ill-arranged school garden does not develop in the pupils a desire for beautiful surroundings. An agricultural plot that produces nothing of value, or Nature-study that does not lead to intelligent appreciation of Nature, does not carry out the aim of the work. All that is done should be thorough and effective.

First Class—Ages 6 to 7.

Observation of flowers, leaves, and stems of plants grown in gardens or pots.

Distinguishing and drawing plant forms and colours.

Recognition of common garden and native plants.

Observation of forms and habits of such animals as :—snail, caterpillar, butterfly, birds, and domestic animals, and of fish and other aquatic animals in school aquaria.

NOTE.—In all plant and animal study, drawing in colours should be an important part of the work *in all classes.*

Appropriate selections of poetry should be learnt in each class (see list of poems in Addenda).

Second Class—Ages 7 to 8.

Continuation of work of previous year.

Talks about playground trees and their visitors.

Particular attention should be directed to seasonal changes in all plant and animal study.

Observation of form and habits of animals mentioned under First Class, and also of mosquito and moth.

Third Class—Ages 8 to 9.

Revision and extension of last year's work. Observation and recognition of flowers, leaves, stems, and roots.

Life-history of two plants—*e.g.*, French bean and wheat or maize including the structure of the seeds and their mode of germination.

The conditions (air, light, heat, soil, water) necessary for germination and growth.

Further study of types of animals taken previously, and study of cockroach, grasshopper, ant-lion, bee, cicada (locust).

Two or more life histories selected from—moth, mosquito. house fly, dragonfly, earthworm, beetle, walking stick, preying mantis.

Comparison of spider and insect.

Study of birds of playground and locality.

Fourth Class—Ages 9 to 10.

Plants.—Observation and drawing of leaf-stalk, flower-stalk, parts or flower of cultivated or native plants, leading to the discovery of their functions.

Study of twigs and buds of deciduous trees and comparison with evergreens.

Animals.—Study of cricket, wasp, ant, or other available insects.

Two or more life histories from previous list.

Further observation of birds, and keeping of bird chart.

Study of any available mammals.

Fifth Class—Ages 10 to 11.

Plants.—Study of plant adaptation, pollination, seed dispersal and climbing, particularly in relation to native plants and weeds.

Recognition of common natural orders of plants, such as cabbage family, pea or bean family, and grass family.

Animals.—Closer study of examples selected from the following—snail, river mussel, insect, spider, crayfish, frog, turtle, lizard, snake, bird, and mammal.

(Near the sea marine subjects may be selected, *e.g.*, sea-worms, sponges, shellfish, oysters, anemones, and other examples of shore life.)

Sixth Class—Ages 11 to 12.

Plants.—Study of the following adaptations—perching habit (as in staghorn and rock-lily); parasitic plants (as dodder and mistletoe); drought-resisting plants; insectivorous plants (as sun-dew).

Recognition of natural orders—Carrot family, eucalyptus family, banksia family, and rose family.

Weeds and their importance—how they spread—the harm they do.

Animals.—Further study of some of types named for last year.

Independent observation of nature and research on the part of the pupils.

The records of the observations and conclusions by the pupil, both in their individual note-books, and in the general school record, are of the utmost importance.

Seventh and Eighth Classes—Ages 12 to 14.

ELEMENTARY SCIENCE.

Teachers who desire to substitute an equal range of work in Elementary Zoology, Geology, Entomology, Astronomy, or Hygiene in their 7th and 8th Classes should submit to their Inspector, for his approval, an outline of the proposed course before adopting it.*

A. *Heat*—
  (1) Expansion due to heat; the thermometer; other applications.
  (2) Change of state due to heat; the three states of matter. Distillation and condensation—rain and dew; the water bag; danger of wet clothes, &c.
  (3) Transference of heat.

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* Teachers who select Astronomy as their alternative Science-subject should make application to the Chief Inspector for copies of the Government Astronomer's pamphlet, which indicates the scope and range of the Science required in the Primary Course.

B. *Water*—Solvent action of water; separation of soluble from insoluble material. The soil food of plants. Hardness of water—effects in the household and on boilers of steam engines—surface tension and capillarity—(observation of common phenomena, such as beetle walking on water, sand grains floating on water, action of lamp wick, &c., without any attempt at explanation of surface tension)—fluid pressure; transmission of fluid pressure—applications (town supply, &c.); the U tube.

C. *Air*—Weight and pressure of air; analogy between water pressure and air pressure; construction and use of the barometer; interpretation of barometric records.

D. Involved in the above course will be certain pieces of measure ment work. Any measurements undertaken should be carried out as accurately and carefully as possible. Get the children into the habit of taking the mean of several observations rather than a single reading. There is, however, a rather common tendency to overdo measurement work in the opening sections of experimental science—children get the idea that the measurements are an end in themselves, instead of a means to an end. Much of the measurement work set down at this stage would fall more naturally under mathematics. Teachers will not go very far wrong if they undertake measurements only when the direct need arises.

GENERAL NOTES ON NATURE-STUDY.

THE essential point in a Nature-study Course is that first-hand knowledge, on the part of the pupil, is required at all stages. One of the aims of Nature-study is the building up a habit of inquiry in the child's mind. This cannot be done by *telling* the child about the wonders of the world surrounding him, but by leading him to *discover* them for himself. A dry formal study of plants and animals will not arouse any interest in the subject. The child should be led to see the connection between form and function, and to recognize that the things he is studying are living things, and that their form bears a definite relation to their mode of living, and environment. Probably the pupils have already noticed such a thing as the connection between the webbed feet of ducks and geese, and the fact that they get their food to a large extent in the water. They should be led to apply the same principle to all living things.

Let them discover by observation and experiment that a plant is a living thing which grows, feeds, breathes, moves, and performs other vital functions, and then go on to discover how the form and structure help in its struggle for existence.

In doing this, the child is not only gaining a knowledge of his own environment, but also learning to appreciate beauty—not the beauty of form and color alone, but also the beauty of perfect fitness for its surroundings.

To be successful, Nature-study should not be elementary botany or zoology, merely leading to a recognition of the parts of plants and animals, but a study of the purpose of these parts, and, as far as possible, how they originated.

As one of the main aims of Nature-study is to bring the child into sympathy with Nature, there should not be any unnecessary destruction of plants or flowers, and the greatest care should be taken to avoid any cruelty to animals, even of the lower orders, kept for observation purposes. When no longer needed they should be liberated.

It is important that the work should present itself as a series of problems which are to be solved by observation, experiment, and deduction.

There is no need for elaborate apparatus in the experimental work—most of it can be improvized, and here there is an opportunity for the pupils to exercise their ingenuity in devising, and handiness in constructing the apparatus. The work here correlates with manual training.

Experiments need careful thought beforehand. They may be used to verify some conclusion arrived at after observation, or they may be planned to enable us to discover some unknown fact. But in either case they must have a *definite aim.* Experiments are questions, and must be so put that the answer will be definite. They should, as far as possible, be planned by the children themselves, and they should be carefully recorded. Even the records of failures are of great value. The record should include what was done, what was the result, and what was discovered from it. A careful sketch should be made of the apparatus set up, if any, and if it is possible to make a sketch which would indicate the result, that should also appear. Random experiments, undertaken with no definite aim, are valueless. The experiment, as a question, must be pertinent.

The character of the nature study course will be influenced very largely by the nature of the district in which the school is situated, and by the seasonal changes. Teachers sometimes complain that their district has such extreme conditions that no nature study worth while can be done. But it is under just such conditions that we find plants and animals most wonderfully adapted to their surroundings. The plants are stunted, angular, and woody—what is the reason? And of what value is this to the plant in its never-ending fight with its environment?

Take the things nearest to hand. Close observation of familiar things will reveal much of interest that has been missed. As far as possible let the pupils discover and supply the material. They will be more interested in what they have provided themselves than in what is placed before them by the teacher.

If the seasonal changes are properly studied beforehand, the teacher will be able to draw up in outline programmes of work for the year. In schools with more than one teacher, the programmes in Nature study should be carefully discussed, and drawn up, either by the whole staff in consultation, by the head teacher, or by one of the staff who is specially qualified. This will prevent the overlapping which might otherwise occur. One should not find the germination of seeds set down in succeeding programmes in every class, for the pupils will find the subject lacking in interest if it is merely a repetition of work already done. At the same time it must be borne in mind that a subject already studied in a lower class may be again approached in a higher one; but in that case the second attack on the subject should be more intensive—a different aspect should be considered. For instance, in a first class, children might grow seeds, observe and record the stages of growth and arrive at the conclusion that seeds were really baby plants, and also learn to appreciate the beauty and wonder of the living plant arising from a seemingly dead seed; but later, in, say, fourth class, the subject might be reverted to, the object being the solution of such problems as: What are the needs of the seed before it can germinate?—How does it get out of its coat?—How does it get out of the ground?—What does the embryo plant live on before roots and leaves are formed?—What are the parts of the seed?—What are the functions of these parts?—and so on.

The teacher should always bear in mind that it is the pupils who are to discuss the subject, make observations, and discover facts. The teacher's work is *not to give information*, but to guide, to indicate ways of approach, and to offer suggestions and criticisms.

If these methods be followed a keen interest in Nature will be developed, so that it becomes a frequent source of conversation between pupil and pupil, and between teacher and pupil.

The methods of attack may be divided as follows:—Nature-observation talks, Nature lessons, making drawings and records, correlation with other subjects, collection and identification of specimens, field excursions.

Observation talks are usually confined to the lower classes, but they can be used to great advantage in all classes. The children can talk about the natural objects and phenomena they have seen out of school; problems which arise may be discussed, the methods of solving them considered, and the children encouraged to make further observations for discussion at the next chat. The study of birds is best undertaken in this way.

It must be borne in mind that the formal Nature-studies are to be in no way information lessons. The Nature-study lessons proper will be on the subjects set out in the Syllabus, and can very often be profitably included or referred to in the talks. References to the same subject in the reading or geography lessons can be made.

Correlation with other subjects is very desirable. It conduces to greater interest being taken in both subjects—but the correlation must be real, and not a forced correlation, or one of names. In weather-study, for example, correlation with mathematics is easily arranged. Problems arising out of observations and records are examples which will interest the pupils. Such are the volume and weight of an inch of rain, worked out by a cardboard box of a cubic inch capacity (manual work comes in here), filled with water, weighed and measured, and then carried on, to finding the volume and weight which an inch of rain would give on a square foot, a square yard, the school roof, the amount of water an inch of rain will put in the school tank, the volume and weight on the school garden, on an acre, on the playground, &c. Finding monthly and yearly averages of rainfall and temperature come under this head.

The making of records and drawings is most important, and here the Nature-study links up with English and art work. The neat and careful entering of records and notes should be methodically carried out, and should result in a desire for definiteness and accuracy of statement. Making sketches (plain or coloured) of the objects studied has many advantages. It will help to fix the information discovered in the memory, and it will also lead to improved observation; and it will be found that closer observation will result in improved drawing. Bad drawing is, in most cases, a concomitant of careless seeing.

In such work as weed-study, or the study of economic plants and native plants, collections, properly labelled, are a necessity. They form a kind of reference library for future use, and they should be preserved in the school museum. Collections of local objects of interest may be made, but teachers should strongly discourage the collection of birds' eggs.

The school museum is a very useful adjunct of Nature-study if properly carried out, but it should not be a mere collection of curiosities. If it is a proper museum it is an expression of work done by the pupils, and this will necessitate its constant growth. An American writer has wisely said, "A finished museum is a dead museum." The mounting of specimens, making trays and boxes and proper labels for them, will give the opportunity for correlation with manual work. The information on the labels is most important; it has been truly said that "a museum is a collection of labels illustrated by specimens." The information on the labels will be the result of the inquiries and experiments of the pupils in studying the specimens.

The collections will fall under three heads—(1) Local specimens which have been studied; (2) objects referred to in the reading or other lessons; (3) in the infant school particularly, specimens valuable for their beauty or for their interest, as coming from other localities. In an inland school, sea urchins, shells, corals, and other things not found locally would form a valuable section of the museum.

If possible, an aquarium and a vivarium should be part of the equipment of the school. Children are greatly interested in the growth of water plants, and the development and habits of water insects, tadpoles, and fish, and of insects in the vivarium.

Excursions, if they can be arranged, will do much towards keeping up interest in the subject. Nature-study is pre-eminently an open-air subject; but an excursion should not be merely a pleasant ramble, with observation of the beauties and wonders of Nature. It should have a *definite object*—some particular point to be studied. While on the way to where the desired object may be found, observations on everything of interest may be made and recorded, but when the particular subject of study has been reached, the pupils' attention should be directed to that, and that only.

The school garden, of course, furnishes a good opportunity for making Nature-study an open-air subject.

SCHOOL GARDENING.

The cultivation of flowers is possible in every school. If the soil is good, flower-beds can be set out in the open. If the soil is unsuitable, and flower-beds cannot be made by trenching and procuring good soil, a bush-house can be easily constructed in most cases, or flowers can be grown in pots in protected parts of the playground or on the school verandah.

A permanent school record should be kept, showing (*a*) the work done; (*b*) the measure of success achieved under prevailing conditions; (*c*) the means adopted to ensure success against unfavourable conditions; (*d*) experiments in improving the blooms, *e.g.*, pruning, budding, grafting, manuring, &c.; (*e*) preparation of seed for planting; (*f*) collecting seed, with notes as to the quality and the means of preserving for future sowing, and any other interesting and important features of the work done.

The flower-beds should be tastefully laid out. Ornamental edging, or well-trimmed borders, flowering shrubs, and, where necessary, protective hedges, can be made good use of. The gardens should be disposed so as to secure the end aimed at, *i.e.*, the beautification of the school grounds, and the development in the pupils of a desire for beautified surroundings.

Shade trees should be grown, both for use in hot weather and for ornament. They should not be planted so as to overhang the school roof, as the leaves get into the spouting and the school tanks, and so pollute the water supply. They should be planted at a distance from one another sufficient to allow them to reach their full growth without interference, and at a proper distance from the bordering fences. The lower branches should be trimmed so that broken projecting twigs may not be a source of danger to the pupils.

A trellis covered with light vines might be provided to hide the closets and secure more privacy. A grove of shrubs, or a spreading tree, might answer the same purpose, provided that the buildings are not unduly shaded from the sun.

Water for the school garden is a serious problem in many schools. Something may be done by conserving waste water from the wash-basins and from the drinking-mugs. In special cases, where the success of the work has warranted the expense, a windmill or a force-pump has been provided by local enterprise, or aided by the Department, and a constant supply of water secured from a neighbouring stream or well.

By a selection of plants or seeds, the school garden may be made to bloom the greater part of the year. The teacher in every school has some opportunity for displaying his initiative and resource, and the refining influence of a good garden as a school adjunct calls for the full exercise of initiative and resource.

In watering be careful never to use the spray or watering-pot when the sun is shining, particularly with ferns. You will surely burn them off if you do.

In some school grounds a rockery can be built, and if reasonably well constructed at least such hardy plants as the cactus family, pig-face, stone crop, &c., may be grown even in the driest weather.

Where not exposed to hungry stock, light vines can be grown on the fences, and many other devices will occur to the thoughtful and interested teacher, whereby his school ground can be transformed into a beauty spot, filling the pupils with life-long inspiration that may lead them to carry a refining influence into their own homes.

Suggested Programme for Work Each Month.

FEBRUARY.

Most of the flowering annuals, and some biennials, will have died during vacation; these should be renewed. Those which have any signs of life may be cut down to within four inches of the ground. Some of the cuttings may be struck in a shady, damp place. The remainder of the rubbish, together with all weeds, especially from the paths, should be removed to the compost heap. If the season will permit give the beds a light forking, well pulverising the surface. Keep the beds flat on the surface, do not raise them. In some shady position, or in an open bed a few of the following seeds may be sown:—

Calliopsis,
Snapdragon,
Cosmos,
Stocks,
Wallflowers,
Dahlia,
Amaranthus.

They should be shaded with boughs. Any plants that are not too far gone, as calliopsis, geraniums, etc., should be cut down and well watered. Trim the edges of the beds and paths. Mulch the surface between the flowers with any available waste matter. Save all waste matter. The house and washing water is invaluable. Do not apply it directly on the surface, but through tins.

Refer to Halsted's book, "Notes on Gardening," supplied by the Department, for further information.

MARCH.

This is one of the best months for preparing the flower garden for an autumn display. Plant edging plants—alternanthera, begonias, mesembryanthemum, dwarf geranium (M. Salroy), pyrethrum, etc. Avoid planting in straight lines, make scallops, and in each scallop plant six seedlings of one class from those seeds previously sown, or sow seeds of marguerite, carnation, petunia, verbena, pansy, marigold, etc. Prepare the ground for sweet peas, making a small sowing. Plant a few bulbs in groups. Well water the dahlias and chrysanthemums, and keep them tied and staked. Look to your asters, if previously planted, that the green worms are not destroying them. If thrips, or red spider, are prevalent use tobacco dust mixed with a little sifted lime. Scale and aphis will attack the roses, use strong soap and water, or kerosene emulsion. Your verandah and pot plants should receive liquid manure, and a little fresh soil on the surface.

APRIL.

The garden should present a pleasing picture being loaded with flowers. Do not forget to give the roots of all plants weak liquid manure when flowering. Sweet, perennial, and everlasting peas, nasturtiums, dianthus, lupins, eschscholtzia, and poppy, may be sown, and bulbs may be planted. Prepare a sheltered corner for propagating cuttings—roses, carnations, pentstemons, &c. Keep the surface of the beds moved with a hoe. Remove all weeds and rubbish.

MAY.

The garden being in full bloom will merely require supervision, so that goats, cattle, rabbits, &c., shall not destroy the plants. Preparations for the spring may be put in hand. Turn over the compost heap, collect manure, sieve soil for pot plants, adding a little lime. Keep it in a dry condition until required. The edging plants will require trimming. Sowings of Canterbury bells, primrose, primulas, sweet and other peas may be made. More planting of cuttings may be made. Look to the violets. Cover the ground with pulverised manure, and give plenty of water.

JUNE.

The ground must be prepared for tree and shrub planting. The sweet and perennial peas will require some liquid manure. Seed pods from the plants that have ripened should be put into paper bags, named, and dried. When dry they should be put into well stoppered bottles to be kept for future use. Cuttings of roses, chrysanthemums, carnations, and edging plants should be planted. Small sowings of hardy annuals may be made as snapdragon, candytuft, larkspur, nasturtium, calliopsis, verbena, &c. Plant out, in well manured ground, stocks and pansies. The bulbs require a little burnt earth and leaves scattered among them. Prune some of the roses. Have you any indigenous flowers growing? if so, give them burnt rubbish and sand. Do not worry them with manure. Do not expect them to thrive if they are not well protected. Let the ground around them be strewn with leaves, &c.

JULY.

The weather during July is variable. The nights are cold, hence there is little growth. Preparation work may be undertaken—deep-digging, manuring, pruning, grafting, reforming beds, making break-winds and seed-raising beds. Sow hardy annuals in a sheltered position: sweet peas, daisy, aquilegia, petunia, snapdragon, phlox, nasturstium, delphinium, brompton stocks, mignonette, &c. Prune roses and fruit trees. Plant roses, fruit and ornamental trees, and shrubs.

AUGUST.

Growth will be more rapid and sowing of salpiglossis, sweet sultan, honesty, gaillardia, balsam, poppy, sweet peas, rudbeckia, aster, &c., may be made. Give the garden a good manuring and digging. Lift any large non-flowering plants, and cut them back, portions may be replanted. Fork up the pansy and stock beds, giving them a mulch of well-rotted manure. Plant out seedlings. Finish pruning, and dig round all vines. Plant roses, fruit trees, and shrubs.

SEPTEMBER.

Spring has arrived, and sowings of all annuals, biennials and perennials may be made. Regard should be had to laying out the flower beds that they are diverse in shape, and not wider than four feet. Each bed, or half bed, should contain one class of plant, both height of growth and colour having been considered. All bulbs and tubes may be lifted if the leaves have browned. They should be stored in a dry place, and have their names attached.

OCTOBER.

Asters, zinnia, sunflower, portulaca, amaranthus, leptosyne, &c., may be sown, or seedlings planted out. All seedlings should be shaded after transplanting. The surest way to avoid failure in transplanting is to open a hole, lay the seedling in, and wash in the soil around the roots. A few tubers may be planted. Keep the flowering plants well watered. A little liquid manure will be beneficial if applied to the roots, especially sweet peas, asters, leptosyne, &c.

NOVEMBER.

There is very little to do in the way of planting, except to remove any annuals that have finished blooming, and supplement them with those in reserve. Any summer varieties may still be sown—as helianthus, sunflower, coleus, gomphrena, asters, pyrethrum, portulaca, zinnia, &c. Water may be applied through tins to the roots, and with spraying at night should provide many pleasing results. Cuttings of chrysanthemums, fuchsia, &c., may be planted in a sheltered position. Grass plots would be benefited by giving a top-dressing of friable soil. All weeds must be kept in check, and the edges of paths and beds trimmed. The shrubs and trees will require water, which should be applied through tins to their roots. Pests will be numerous, and must be destroyed. See "Notes on Gardening" for remedies.

DECEMBER.

The few weeks remaining previous to vacation might be devoted to a revision of the year's work; reviewing gardening records; noting improvements for next year; and arranging for the care of the pot plants during vacation.

Note.

Surplus flowers might be used to gladden the inmates of the sick room and hospitals.

A wet day might be devoted to giving lessons on the arrangement of flowers in vases.

The adornment of the schoolroom with flowers should be undertaken by certain pupils each week. The water in the vases, and half an inch from the flower stems, should be removed every day. Do not overload the vase with flowers. Note that some flowers cause others to wither when put into a vase together.

Flowers should not be picked while the sun is shining on them, especially wild flowers, unless the ends of the stems are immediately immersed in boiling water or put in the fire. Small pieces of vegetable charcoal, or two or three grains of sulphate of ammonia put into the vase will materially revive cut flowers.

The names of all flowers, grasses and plants within the school area should be known, and they should be recognized by their names.

When growing flowers and vegetables it is preferable to plant two or three kinds of seeds, and as many varieties of these kinds as possible.

SCHOOL AGRICULTURE.

In elementary schools agricultural instruction should treat to a very limited extent of the scientific and commercial aspects of agriculture. Its object mainly is to interest children in the cultivation of the soil, to develop a love for plants and animals, to show them what part they can play in the production of useful or beautiful things, and to give them a proper attitude towards country life.

The training should be a permanent part of the school curriculum, and interest should be maintained throughout the year.

There will be a close connection between the Observation Talks, the Nature-study, and the Agriculture.

The flower garden appeals to the æsthetic feeling of the pupil if it be neat and beautiful. Agriculture in its wider sense deals with the useful—things that have a commercial value.

Importance of the work.

It would be well to impress on the pupils a few facts regarding the importance of agriculture as an industry.

Almost the whole of man's food supply comes, either directly or indirectly, from the soil.

As population increases, more intense and more scientific cultivation is imperative if normal food supplies are to be maintained.

The man who produces from the land renders a most important national service. Agriculture is the basis, and always has been the basis, of the civilization of every nation that has taken a leading place in the world.

The soil contains vast stores of wealth for the thoughtful and industrious worker.

Hints and Suggestions.

Taking into consideration the long mid-summer vacation, and the excessive heat about that time, especially in the western districts, it would be wise to arrange for crops that mature before December.

To avoid destruction of plants by rabbits or straying stock, it is essential that garden plots be securely enclosed with strong netted fences. The netting should be sunk at least four inches in the ground.

Care should be taken not to enclose a larger area than can be well managed.

When choosing a site climatic conditions should be studied. An eastern or north-eastern slope is generally the best. On the coast where heavy rains are frequent, care should be taken that surplus water can get away. In the western districts, however, the retention of moisture and the supply of water are problems for solution.

Bleak and wind-swept positions should be avoided.

The class of soil to be operated upon will need to be closely observed, and, if possible, its origin traced.

Alluvial deposits; light soils from granite and sandstone; rich soils from basalt; heavier soils and clays, all have their characteristics and respond to special forms of treatment.

A test of the amount of humus—the fine black or brown powdery matter on which plants feed—should be made. This may be done by dissolving some of the soil in a glass tube or ordinary tumbler, then shaking it up and allowing it to settle. Unless there is at least 10 per cent. of humus fresh soil and manure must be added.

Where the subsoil is of an impervious nature draining may be necessary. Under ordinary conditions gardening operations cannot be successfully carried on without manure. As far as possible this should be gathered and prepared on the site. A compost heap or manure pit should be arranged for in the early stages of the work.

One of the difficulties of the farmer arises from the lack of regular and sufficient rainfall. This is to some extent overcome by fallowing and frequent surface cultivation. These methods will require close and thoughtful attention, and an effort should be made to make the pupils understand why keeping the surface soil loose assists so much in the retention of moisture and in the recuperation of the soil.

Mulching, as a means of retaining moisture and of protecting surface roots, will receive special attention.

The value of deep or shallow cultivation and the right use of manures are problems for investigation and experiment. So, also, will be the amount of seed that should be sown on given areas. Much valuable information on these matters may be had from the publications of seed merchants and others, but the school plots can test and often add to the store of accurate knowledge on these points. Schools have already done valuable work in this direction.

In order to get satisfactory results, good seeds are essential. From various causes good seeds deteriorate or become mixed with those of undesirable plants. Methods of testing might be investigated. Again, it has been found that certain troubles may be overcome by treatment of seeds before planting. This should also be a matter for inquiry and experiment.

When possible it is desirable that seed be gathered and stored for future use, or for exchange with other schools.

In addition to notes made by the boys, it is suggested that a book be obtained, and that a brief account of operations, experiences, and results be entered each week. This book should be preserved as a permanent school record. The value of such a record is so great that no scheme of work is complete without it. Systematic recording of experiences and results will assist materially in arriving at intelligent inferences, will be useful for reference during succeeding years, and will indicate the value of the work attempted.

Farm Animals.

Though at school it is impossible to handle the various animals found on farms, their uses and their values might form subjects for discussion at times when the ordinary garden work cannot be carried on.

The Horse.—Its value in supplying traction power and means of locomotion.

The Cow.—Various breeds, fodder, milk-testing, need for cleanliness in yards, etc. ; value of milk products.

Sheep.—Its value in "mixed farming."

Pigs.—In dairying and maize-growing districts are very profitable. Why?

Poultry.—Comparative values of kinds. Their importance on the farm, both as regards the food supply and the income. Methods of treatment, food, &c.

Bees.—Value of honey; play an important part when working amongst flowers.

Suggested Programme of Work for each Month.

As districts vary considerably with regard to climate, soil, and rainfall, it is not expected that teachers will attempt to grow all the plants named, or that others should not be tried. Only some of the well known varieties are mentioned in the Calendar. Good work may be done by specializing in a few kinds.

While it is true that pupils learn by their failures, it is to be regretted that too often the failure is assumed at the outset; consequently, many of the gardens have not the desired influence. Teachers would do well, therefore, to carefully consider the scheme they have in mind before spending time or energy on it. Having decided on a plan of work, an effort should be made to ensure success by thorough preparation and consistent attention. There should be a definite aim, the production of well developed plants. If failure comes, an attempt should be made to understand why, and to ascertain whether a remedy can be found.

FEBRUARY.

Vegetable Section.

Attend to fences. Clear off weeds and grass, stacking same on compost heap. Turn over as much of the land as possible, and prepare beds for autumn sowing.

Sow seeds of cabbage, cauliflower, leek, lettuce, beet, spinach, beans, onions, and radish.

School Farm Section.

Turn over the soil, and allow to lie exposed to the air.

Reasons for fallowing.

Experiments dealing with evaporation.

Examination and testing of seeds.

MARCH.

Vegetable Section.

Sow carrots, turnips, peas, lettuce, cauliflower, adish, celery, beet, broad beans, onions, leeks, etc.

Onions and leeks should be sown on raised beds

Manure well for cabbage and cauliflower.

School Farm Section.

Sow barley, oats, lucerne. (The great value of lucerne as a fodder is not sufficiently known.)

Plant potatoes (quick-growing kinds).

Discuss diseases in wheat.

Uses of blue-stone and quick-lime.

Why these must be mixed in wooden or enamelled vessels.

Encourage pupils to make inquiries concerning varieties of wheat found to be successful, and test the truth or otherwise of such information.

APRIL.

Vegetable Section.

Sow most seeds as in March.

Transplant cabbage and cauliflower plants. Protect same until established.

Watch for aphis, and treat with kerosene emulsion.

School Farm Section.

Sow varieties of wheat that mature slowly.

Experiment with different quantities of wheat to the acre.

Illustrate value of "dry-farming" methods.

Sow barley, clover, field peas.

MAY.

Vegetable Section.

Further sowings of broad beans, cabbage, cauliflower, lettuce, onions, peas, radish, and turnips.

Transplant spinach, rhubarb, cabbage, cauliflower, and lettuce.

Watch for aphis and cabbage moth and treat with kerosene emulsion.

Keep the surface well cultivated to combat capillary discharge of moisture.

Trench and prepare beds for asparagus and rhubarb.

School Farm Section.

Sow mid-season varieties of wheat; also rye, barley, and prairie grass.

Note advantages of successive sowings.

Observation of growing crops:—Stooling of wheat, etc.

JUNE.

Vegetable Section.

Further sowing of peas and radish.

Set out cabbage plants.

Cultivate all spare ground and expose to the action of frost.

School Farm Section.

Further sowing of wheat (quick growing varieties).

Cutting or feeding off to encourage stooling.

Note effect of frost on growing plants.

Dig over spare land.

JULY.

Vegetable Section.

Sow tomato seeds for planting out in spring. (These should be sown in frames and carefully protected from frost.)

Sow peas for spring crop.

Mulch rhubarb thickly. Keep celery well earthed up. Fallow all spare ground. Do not transplant any of the cabbage family this month.

School Farm Section.

Observation of growing crops

Harrow or rake crops that have been fed off; reason for doing this.

Fallow spare ground.

AUGUST.

Vegetable Section.

Sow beet, cabbage, lettuce, carrot, turnip, and parsnip.

Further sowing of tomato seed in frames.

Prepare plots for squashes, marrows, cucumbers, and melons.

Plant a few potatoes, early varieties.

Strawberry runners may be planted.

School Farm Section.

Sow paspalum and other grasses.

Note the effect of frost on the bloom of wheat.

If lucerne has blossomed take off first cut.

In warm districts plant maize.

SEPTEMBER.

Vegetable Section.

Sow seeds in the open. Squashes, melons, marrows, pumpkins, cucumbers, summer beans, carrots, lettuce, parsnips, peanuts, etc.

Plant out rhubarb roots.

Watch for and destroy pumpkin beetle.

Plant potatoes.

School Farm Section.

Observation of growing crops.

Value of ensilage. (This can be made in a small pit or even a box. The only essentials are pressure and the exclusion of air.)

Sow maize, sorghum, and Rhodes grass.

OCTOBER.

Vegetable Section.

Sowings as in September.

Plant out tomatoes (train to trellis or stakes). Mulch heavily, and give liquid manure when the ground is damp.

Thin out plants where necessary.

Keep weeds down.

Watch for and deal with pests.

School Farm Section.

Harvesting crops of hay. Weighing same and calculating yields.

Fallow land from which hay has been taken.

Plant maize and potatoes.

Eradicate weeds.

NOVEMBER.

Vegetable Section.

This is a good time to plant sweet potato cuttings.

French beans may be sown during all summer months.

Further sowings of melons, squash, etc.

Mulch and stir soil under growing plants. Prune tomatoes and apply liquid manure.

Watch for pests.

School Farm Section.

Harvesting crops and estimating yields.

DECEMBER.

Fallowing available land for future operations.
General review of gardening records.
Estimating values of produce.
Noting values of manures used.
Receiving and recording suggestions for improvements.

School Farm Section.

Harvesting. Reviewing results of the year's work.
Discussion of future plans.

ADDENDUM I.

Gardening Directions.

In small schools where gardening operations are carried on, the teacher should so arrange the garden area that each class has some direct interest in the work.

Digging.—One annual deep digging is sufficient. It should be done deeply and thoroughly, and the ground should be well pulverised. Avoid digging when the ground is sodden. June and July are the best months for digging and manuring.

Cultivation.—The surface of the beds should be loosened with the rake after rain, otherwise the soil will cake. Mulching is beneficial.

Soil requirements :—

Sandy soil requires stable manure abundantly before digging. Lime should be placed on the surface once a year, at the rate of 1 cwt. per acre.

Clayey soil requires stable manure once a year before digging. Lime (at the rate of 2 cwt. per acre) should be placed on the surface.

Loam requires stable manure once a year before digging. Lime (at the rate of 1 cwt. per acre) to be placed on the surface.

Note.—An interval of a month should intervene between digging and the application of lime.

Watering.—Two *good* waterings are sufficient for most plants each week (Mondays and Fridays). Spraying in the evening will be beneficial. Avoid watering at mid-day, when the sun is shining brightly.

Note.—Much harm is done to the plants when pupils apply water indiscriminately.

Planting Seasons :—

Spring—August, September, October.
Autumn—February, March, April.

Seed Sowing.—Hardy annuals (cosmos, poppies, snapdragons, etc.) may be sown in the open The seeds should be sparingly sown on a little sand, covered very lightly with sand, lightly watered and shaded. More delicate varieties (phlox, asters, pansies, etc.) should be sown under cover in prepared soil consisting of half sand and leaf mould, and the seedlings, when strong, should be transplanted.

Bulbs should be planted in sandy loam during March; dahlia tubers in rich loam during November and December, and trees and shrubs during June and July.

Pot Plants.—Most pot plants require re-potting annually during September. A general re-potting soil should consist of one part sand, one part leafmould (rotten leaves or rubbish), two parts friable loam, and a little charcoal or burnt rubbish; the whole to be passed through a fine sieve. Water by immersing the pot in water twice a week for half an hour—Mondays and Fridays. The leaves should be kept free from dust by careful hand-washing. Keep the plant away from draughts.

Pest Remedies:—

Aphis—Spray with nicotine or kerosene emulsion.
Scale—Spray with kerosene emulsion.
Slugs and Snails—Scatter lime around the plants; gather and destroy them.
Thrips and Red Spider—Scatter tobacco dust on the surface.

ADDENDUM II.

Literature of Nature-study.

Good literature should be largely used during the Nature-study period. This reference list will suggest some available material, from which the teacher may select what suits him:—

Ant.

Aesop	... Ant and Grasshopper.
Markham	... Little Brothers of the Ground.
Bailey, Millard	... Battle of the Ants.

Bee.

Kipling	... Red Dog (see Second Jungle Book).
Clinton, Scollard	... Bee Balm.
" "	... The Trumpeter.

Butterfly.

Wordsworth, William ...	... To a Butterfly.
Bowles	... Butterfly and Bee.

Story of the First Butterflies (Holbrook, F., Book of Nature Myths, p.10).

Cat.

Wordsworth, William ...	... Kitten and the Fallen Leaves.
Joanna Baillie	... The Kitten.

For I am a Family Cat (Songs of Tree-top and Meadow, p. 52).
Why the Cat always Falls upon her Feet (Holbrook, Florence, Book of Nature Myths, p. 19).

Caterpillar.

Thomas, Edith M.	... A Cocoon.
Rosetti, Christina G. ...	... Brown and Fuzzy.
Pyle, K.	... Story of a Caterpillar (Stories of Humble Friends, p. 7).

Cow.

Stevenson, R. L.	The Cow.
Taylor, Jane	Thank you, Pretty Cow.

Dog.

Browning, R.	Tray
Gilder, R. W.	Lee (Richardson, Poets' Dogs, p. 139).
Trowbridge, J. T.	Vagabonds, „ p. 78).
Browning, E. B.	To Flush
Wordsworth	A Dog Incident : Fidelity.
Cowper	Dog and Water Lily : The Woodman's Dog.

Donkey.

Aesop	Donkey and the Salt.
Ortoli, Frederic	King of the Lions (Evening Tales, p. 189).
Lummis, C. F.	Honest Big Ears (Man who Married the Moon, p. 103).

Earthworm.

Pierson, Clara D.	The Earthworm Half-brothers.
Turner, E.	The Worm.
Gisborne	The Worm.

Fly.

Oldys, W.	To a Fly.
MacKeller, Thomas	To a Troublesome Fly (Burroughs, Songs of Nature, p. 234).
Blake, William	The Fly.

Story of the Bees and the Flies (Holbrook, Book of Nature Myths, p. 93).

Frog.

Grimm	Frog Prince.
Andrews, Jane	Sixty-two Little Tadpoles (Stories Mother Nature told her Children, page 147).
Roberts, C. G. D.	Frogs.
Belloc, Hilaire	The Frog.
Hawshaw	The Chorus of Frogs.

Fox.

Aesop	Fox and the Grapes.
Jordan, David Starr	Little Blue Fox (True Tales of Birds and Beasts, p. 80).

Grasshopper.

Keats, J	The Grasshopper and the Cricket.
Griffis, W. E.	Lord Longlegs' Procession (The Firefly's Lovers, and other Fairy Tales of Old Japan, p. 111).
Cowley	The Grasshopper.

Horse.

Norton, Caroline E. S.	The Arab and His Favorite Steed
Baldwin, James	Wonderbook of Horses.
Harte, Bret	Chiquita.
Twain, Mark	A Horse's Tale.

Moth.

Sill, Louise M.	To a Harlequin Moth (In Sun or Shade, p. 9).
Allen, Grant	Only an Insect.

Mouse.

Burroughs, J.	A Brave Mouse.
Lummis, C. F.	War Dance of the Mice (Man who Married the Moon, p. 24).
Burns, Robert	To a Mouse.
Lummis, C. F.	Dr. Fieldmouse, (Man who Married the Moon, p. 232.)

Rat.

Browning, Robert	Pied Piper of Hamelin.
Dodge, Mary Mapes	The Rats.

Sheep.

Blake, William	"Little Lamb, who made Thee?"
Thomas, Edith M.	What the Lambs Say.
Scott, Duncan C.	A Flock of Sheep.
Taylor, Ann	The Sheep.
Bloomfield	Lambs at Play.

Snail.

Lamb, Charles	The Housekeeper.
Ortoli, Frederic	Mr. Snail and Brother Wolf (Evening Tales, p. 34).

Spider.

Lear, Edward	The Daddy Longlegs and the Fly.
Daulton, A. M.	Spider's Garden Party (Wings and Stings, p. 151).
Howitt, Mary	Spider and the Fly.

Wasp.

Babes in the Wood	(Wiggin & Smith, Story Hour, p. 96.)
Daulton, A. M.	Air Castles and Dugouts.
Lamb, Charles and Mary	Wasps in a Garden.

Blackbird.

Tennyson, Alfred	Blackbird.
Barnes, William	The Blackbird.
McGaffey, Ernest	The Redwing.

Canary.

Jewett, Sarah Orne ... ... A Caged Bird.
Leighton, Robert ... ... Our Canary. Bird (Birds of the Poets, p. 27).
Martin, George ... ... To my Canary Bird.

Crow.

Whitney, A. D. T.... ... ... The Crow (Birds of the Poets, p. 43.)
Scollard, Clinton ... ... Jim Crow.
Canton, William ... ... The Crow (Poems and Lyrics of Nature, p. 49).
Miller, Olive Thorne ... ... How the Baby Crow was Punished.
Bolles, Frank ... ... The Crow.

Duck.

Scollard, Clinton ... ... Ducks.
Miller, Olive Thorne ... ... Ducklings who would not give up. (True Bird Stories, p. 151).

Eagle.

Sharp, William ... ... Hymn of the Eagle.
Cook, Eliza ... ... Song of the Eagle.
Tennyson, Alfred ... ... The Eagle.
Zitkala-Sa ... ... Shooting the Red Eagle.

Goose.

Roberts, C. G. D. ... ... Flight of the Geese.
Thaxter, Celia ... ... Wild Geese.
Thomas, Edith M. ... ... A Flock of Wild Geese.

Hen.

Thomson, James ... ... The Careful Hen (from The Seasons: Spring).
The Chickens (Murray and Cook: Songs of Tree-top and Meadow, p. 122).
Sister-hen and the Crocodile. (Curious Book of Birds, p. 145.)

Owl.

Burns, Robert ... ... To the Owl.
Tennyson, Alfred ... ... The Owl.
Lanier ... ... Owl against Robin.
Why Mr. Great Horned Owl Hatched the Eggs. (Pierson: Among the Forest People, p. 22.)

Parrot.

Campbell, T. ... ... The Parrot.
Wordsworth, W. ... ... The Parrot and the Wren.

Pewee.

Trowbridge, J. T. ... ... Pewee.

Robin.

Caldwell, W. W.	Robin's Come.
Aldrich, T. B.	Winter Robins.
Wordsworth, William	To a Redbreast.
Scollard, Clinton	The Robin.

Sandpiper.

Thaxter, Celia	The Sandpiper.
Scott, Duncan C.	Sandpipers.
Dana, Richard H.	Little Beach-bird.

Sparrow.

Forsyth, Mary I.	English Sparrows.
Lear, Edward	Mr. and Mrs. Spikky Sparrow.
Lathrop, George P.	Song Sparrow.
Seton, Ernest Thompson	Myth of the Song Sparrow.
Van Dyke, Henry	Song Sparrow.
Larcon, Lucy	Song Sparrow.

Swan.

Tennyson	The Dying Swan.

Swallow.

Arnold, Edwin	Swallows.
Hovey, Richard	Swallow Song.
Miller, Emily H.	The Swallows.
Meredith, Owen	The Swallow.

Warbler.

Scollard, Clinton	The Warbler.
Cook, Rose Terry	Williams (Through the Year with Birds and Poets, p. 293)

Apple.

Uhland, J. L.	Wayside Inn.
Riley, J. W.	Little-red-apple Tree.
Martin, William	Apple Orchard in the Spring.
Brown, Kate L.	Apple Blossoms.

Bean.

Why the Bean wears a Stripe down the Back (Bailey and Lewis, for the Children's Hour, p. 72).

Grimm	The Straw, the Coal, and the Bean.

Buttercup.

Field, Eugene	Buttercup, Poppy, Forget-me-not.
Inglelow, Jean	Buttercups.

Clover.

Holm, Saxe	A Song of Clover.
Higginson, Ella	Four Leaf Clover.
Stanton, Adele T.	Clover.
Jellife, Helena L.	Clovers.

Corn.

Burton, Richard	Autumn Corn.
Whittier, J. G.	Corn Song.
Fosdick, William W.	Maize.

Baby Corn (Wiggin) Posy Ring, p. 93.

Story of the First Corn, adapted from Hiawatha (for the Children's Hour, p. 221).

Daisy.

Montgomery, James	Daisy.
Keats, John	Daisy's Song.
Goodale, Dora R.	Daisies.
Rodd, Rennell	The Daisy.
Carmen, Bliss	The Daisies.
Sherman, Frank D.	Stone.

Dandelion.

Cone, Helen G.	Dandelion.
Lowell, J. R.	To the Dandelion.
Brown, Kate L.	Dandelion.
Mulock, Dinah M.	Dandelion.

Poplar.

Thomas, Edith M.	The Poplar Tree.
Cowper, William	The Poplar Field.

Why the Aspen Leaves Tremble (Holbrook, F. Book of Nature Myths, p. 122).

Poppy.

Jackson, Helen Hunt	Poppies in the Wheat.
Coolbrith, Ina D.	Copa de Ora.
Markham, Edwin	In Poppy Fields.
Hunt, Leigh	"We are the Slumbrous Poppies."

Strawberry.

Jackson, H. H.	My Strawberry.
Scollard, Clifton	Strawberries.
Wordsworth, William	Foresight.

Thistle.

Gilder, R. W.	Thistle Down.
Thomas, Edith M.	The Flower of the Thistle.
	Butterfly and Thistle Ball.

Tomato.

The Tomato Story (Bailey and Lewis, for the Children's Hour).

Trillium.

Laurence, Ray	Wake, Robin! (quoted in Junior Naturalist Monthly, 1904).

Tulip.

Thompson, Maurice	The Tulip (Songs of Fair Weather, p. 74.)
Riley, Alice C. D.	Gold and Crimson Tulips (Haines, J. D., The Gardeyne Boke, p. 20).
Taylor, Bayard	Tulip Tree (Poems of Home and Travel, p. 95.)

Violet.

Wordsworth, William	"She Dwelt among Untrodden Ways.'
Mulock, Dinah M.	Violets.
Willis, N. P.	April.
Vicontari	The Violet Grave.

Willow.

Plummer, M. E.	Pussy Willows.
Lowell, J. R.	Under the Willows.
Akers, Elizabeth	The Willows.

Poppy.

Jephcott, Sydney	Red Poppies.
Brennan, Chris. J.	Poppies.
Daley, Victor J.	Poppies.

Moss.

Kendall, Henry	Moss on a Wall. Mountain Moss.

Flowers.

Kendall, Henry	Heath from the Highlands.
Burns, Robert	To a Mountain Daisy.
Bathgate, Alexander	The Clematis.
Twisleton, H. L.	To a Cabbage Rose.
Cuthbertson, J. L.	Wattle and Myrtle.
Gay, Wm.	Primroses.
Ogilvie, W. H.	Daffodils.
Wordsworth, Wm.	To Daffodils.
Lawson, Henry	Waratah and Wattle.
Williamson, F. S.	Wind and Wattle Blossom
Richardson, Robert	Ballade of Wattle Blossom.
Gill, Francis	Beneath the Wattle Boughs.
Heney, Thos.	The Flower Everlasting.
Sharp, Wm.	The Rocklily.
Sharp, Wm.	Flame Tree
Sharp, Wm.	Under the Wattle.

Birds.

Bathgate, A. W.	The Moko-moko (Bellbird).
Brereton, J. Le Gay	Swallows.
Brereton, J. Le Gay	The Bird.
Brereton, J. Le Gay	The Silver Gull.
Jephcott, Sydney	A Swan Song.
Sharp, Wm.	Black Swans in Murray Lagoon.
Paterson, A. B.	Black Swans.
Kendall, H.	Bellbirds.
Sharp, Wm.	The Bellbirds.
Wilson, Thos. J. G.	The Lark's Song.
Daley	The Nightingale.
O'Dowd, Bernard	Quail.
Ogilvie, W. H.	The Wagtail.
Thomas, James	To a Water Wagtail, also To a Silver Eye.
Williamson, F. T.	The Magpie's Song.
Williamson, F. T.	Thrushes.
Emerson, E. S.	Kookaburra—The Black Cockatoo.
Thomas, Janet	To a Silver Eye.
Sharp, Wm.	Wood Swallows, also Bee Birds.

Forests, Trees, &c.

Brereton, J. Le Gay	Dead Leaves.
Brereton, J. Le Gay	Budding Bough.
Daley, V. J.	The Forest.
Williamson, F. S.	Gum Trees.
Ogilvie, W. H.	The Bush.
Sharp, Wm.	An Orange Grove. She-oaks on a Stormy Day. In the Fern. She-oaks (near the Sea).
Sladen, D. N. B.	The Orange Tree.

Weather, &c.

Gordon, Adam Lindsay	Song of the Surf. A Song of Autumn.
Kendall, Henry	A Southerly. 7th Stanza of a Death in the Bush. A Nor' Easter. September in Australia. The Austral Months (Sept. as above).
Mackellar, Dorothea	Spring on the Plains. The Open Sea. Night on the Plains. Dawn.
Stephens, J. Brunton	Day. Night.
Wilson, Mrs. J. G.	Winter Daybreak.
Cuthbertson, J. L.	The Australian Sunrise.
Ogilvie, Will H.	Wind of Autumn, also Drought.
Daley, V. J.	Midsummer in a Hawkesbury Valley. 1. Sunset. 2. After Sunset.

Weather, &c.—*continued.*

Bayldon, Arthur A. D.	Sunset.
	The Sea.
Ross, David M.	Autumn.
Gilmore, Mary	Sunset.
	Twilight.
	Autumn Twilight.
Jephcott, Sydney	Noon.
Lawson, Henry	The Blue Mountains.
	The Southerly Buster.
Quinn, Roderick	Spring Song.
Sladen, Douglas W. B.	The Blue Mountains of New South Wales.
	Wentworth Falls.
	Govett's Leap.
	Drought.
Adams, F. W. L.	Spring Morning.
Gill, Frances	Wind in She-oak Tree.
Harpur, Charles	The Cloud.
Sharp, Wm.	Breaking Billows.
	Midnoon in January.
	Sunset.
	Morning in the Bush.

ADDENDUM III.

Pictures for Nature-study.

Pictures of art value are very useful as teaching aids for Nature-study lessons.

Many such pictures are reproduced in modern books and other publications. Whenever teachers own, or are able to procure, such reproductions, it is suggested that they be used in lessons for illustrative purposes.

The following, amongst others, are admirable pictures for this purpose:—

Animals.

Troyon: Return to the Farm (cows, sheep, and dog).

Cat.

Lambert: Family of Cats.
Ronner: The Final Move.

Cow.

Bonheur Rosa: Cattle of Brittany.
Millet: Bringing Home the new-born Calf.
Douglas: Mother and Daughter.
Dupre: Runaway Cow.
" Milking Time (The White Cow).
" Meadow.

Dog.

Landseer: Alexander and Diogenes.
" Distinguished Member of Humane Society.
" Dignity and Impudence.
Reynolds: Miss Bowles (girl and dog).

Donkey.

Bonheur : Humble Servant.

Goat.

Troyon : Goat and Sheep.
Van de Velde : Goat and Kid.

Horse.

Douglas : Young England.
Landseer : Shoeing.
Bonheur : Horse Fair.
Schreyer : Arab Scout.
Hunt : The Bugler.
Lucy Kemp-Welch : New Forest Ponies and many of Horses in movement.

Lion.

Bonheur : Lion at Home.
Landseer : Lion.

Sheep.

Jacque : Sheepfold.
Le Rolle : Shepherdess.
Mauve : Spring.
„ Autumn.
Millet : Shepherdess.
„ Sheep Shearing.

Hen.

Gardner : Two Mothers.
Millet : Feeding the Hens.

Seed Time.

Millet : Sower.

Trees.

Bonheur : Morning in the Highlands.
Corot : Dance of the Nymphs.
Daubigny : Springtime.
Inness : Edge of the Woods.
„ Peace and Plenty.
Picknell : Bleak December.

The work of the "Primitives" shows most careful observation of plants, animals and people. Such are Fra Angelico, Gozzoli, Botticelli, Fillipino Lippi. The Modern Pre-Raphaelites and their disciples also treated their pictures in a similar manner—Holman Hunt, Millais, Burne-Jones.

HYGIENE.

In view of the vital importance of a knowledge of some of the more elementary facts of Hygiene, teachers should regularly devote short periods to "talks" with their pupils upon the subject. Once a week, or once a fortnight, about ten or fifteen minutes of the time allotted to Nature-study might be set apart for this purpose. None but simple facts are to be presented to the children, and these only in the form of plain, general talks without great detail, and avoiding the technical language of the sciences of anatomy, physiology, etc. A knowledge of the scientific names of bones, muscles, and other parts of the body, or an understanding of intricate physiological processes, avails little in the matter of healthy body-building.

The aim will be to cultivate good health-habits, and to bring about a right attitude of mind towards these subjects, so that proper ideas as to cleanliness, personal health, food, and clothing may be formed by the children. Information and advice, which will lead the pupils to develop and protect their bodies, should be forcefully presented.

The fact that improved appearance and ability to work and to enjoy life accompany good health, and that discomfort and inefficiency result from poor health should be constantly referred to. Such things as the wise selection of food, thorough mastication, the importance of a pure-air supply, the advantage of deep breathing, the benefit of an abundant use of pure water, and the careful protection of the body and its organs, will be readily grasped. They are all essential to good health.

For the rest, the teacher's daily supervision of the pupils will afford him opportunities of seeing that they **act** in accordance with the teaching, especially in regard to cleanliness, care of clothing, brushing of teeth, hair, and boots, and so on.

Teachers are asked to manifest a personal interest in the improvement of the health and strength of those of their pupils who do not possess strong bodies, or who, because of improper nourishment, incorrect position, poor breathing habits, obstructed breathing, defective vision, or impaired hearing, are not developing as they should.

Second Class.

Talks upon such subjects as :—The dangers of dirt—the need to remove dirt from our clothing—what washing does for our clothes—how we keep our outside clothes clean—need for keeping desks free from dirt, since dirty desks soil the sleeves of our clothes—need for changing underclothing—why they need changing often—need of washing them—pleasant and comfortable effect of clean underclothing—the use of the handkerchief—clean shoes—evils of sitting in damp shoes—tight shoes—talks on the need for washing the surface of the body—the daily bath—the warm bath—the cold bath—why the face and hands need frequent washing—care of the skin and finger-nails—bad habits of sucking fingers or biting nails to be corrected—cleaning the teeth even more important than washing the face—how and when to use the brush—why we should not put money in the mouth—why we do not eat the peel of fruit—and so on.

Third Class.

Need of cleanliness in the person and home—what is meant by cleanliness—the daily bath and its value—the care of the hair, eyes, ears, and nose—care of the teeth—daily cleansing of the teeth—brushing hair to dislodge dirt and to promote its health and growth—need of good food, pure air, pure water, exercise, and rest—necessity of common sense in the use of these things so as to avoid over-eating, over-exertion, too much rest (laziness)—food and its use in the body—need of food for growth and repair of body—cause of hunger—importance of such foods as milk, eggs, bread, butter, meat, jam, fruit, vegetables—advantages of a mixed diet—need of eating slowly and chewing thoroughly—dangers of over-eating, especially rich foods such as lollies, pastry, cakes, etc.—harmful foods—green or decayed fruits and adulterated foods—simply-prepared foods best for children—they help to develop strong, healthy beautiful bodies—need of absolute cleanliness in preparing food and setting it out at table—care of luncheon tins, baskets, and bags.

Fourth Class.

Air and its use in the body—why exhaled air is impure. Ventilation:—Need of inlet and outlet—windows of bedrooms to be open at night—light—warmth—name and use of chief parts and organs of the body—head, trunk, brain, heart, lungs, stomach, etc., and their functions—means of motion, respiration, nutrition, excretion, sensation (all of these to be very simply treated without technicalities)—cleanliness of house and its surroundings, of playground, street and yards—use of garbage tin—value of open spaces—sweeping and dusting—advantages of dusting with moist cloth—washing up after meals. How house-fly spreads disease—where it breeds, how to deal with it. Mosquitoes—where they breed, how to combat.

Fifth Class.

Revision of digestion and circulation—separating impurities from the blood—work of lungs, skin, kidneys, bowels. Breathing:—Proper position for the best breathing—necessity for breathing through the nose—value of rhythmic deep-breathing—exercises in physical training help breathing. Clothing:—Kinds—differences for cold and warm weather—importance of keeping the body dry and free from colds. Skin:—Uses of skin, hair, finger-nails, and proper care of each. Teeth:—Value of teeth in preparing food for digestion—causes of decay—when and how to clean the teeth. Eyes:—Care of the eyes—their great value to the body—various ways in which they are injured or weakened. The Ears:—Their use to the body—common injuries to—ways of protecting. Voice:—How sound is made—importance of having the voice strong but well modulated—value of careful and clear enunciation.

Sixth Class.

Need for different kinds of physical exercises—advantages of out-door exercises and games—need for rest and sleep—best time for—conditions most conducive to sleep.

Health and strength—Happiness accompanying good health—discomfort of ill-health—effort to secure former worth while—vigorous health the best preventive of any diseases—ability to do, look, and be our best, possible only when good health is secured—health and strength the natural result of wise use of food, air, water, exercise and rest—responsibility of individual to have clean, pure, healthy body.

Alcohol.—Evils of intemperance; wastefulness of intemperance.

Tobacco.—Physical and mental evils of cigarette-smoking by boys.

First aid.—What to do till the doctor comes.

Bandages:—Roller and triangular—their uses.

Accidents and emergencies—treatment of cuts, bruises, strains and, sprains, fractures, nose-bleeding and fainting—the common pressure points—burns, scalds, blisters, sores.

Treatment of (a) Snakebite.
(b) Apparently drowned.
(c) Sunstroke.

Poisonous plants or drugs—how to act when inadvertently taken into the body—ptomaine poisoning.

Clothes catching fire.

Contagious diseases—bacteria briefly and simply spoken of—name and briefly discuss common contagious diseases (see Regulations, p. 84).

Seventh and Eighth Classes.

A more Systematic Study of First Aid:—

Revise and extend the work of lower classes, emphasizing the individual responsibility to endeavour to maintain good health and strength —since ability to play and work our best, look our best, and be our best, are the most satisfactory things in life.

ART WORK.

The course in Art comprises Free Expressive, and Decorative Drawing, Modelling, and Brushwork. About an hour and a quarter per week will be devoted to Art Work.

Modelling and Brushwork are to be regarded as alternative optional subjects; either may be taken with Drawing when teachers have the necessary qualifications, but both should not be attempted in the same quarter in any class.

The expression, invention, and creation, must be the child's own, carefully developed through self-criticism and the endeavour to improve. The child, as well as the teacher, should know why each drawing or design is being done.

There should be plenty of practice in Drawing and Modelling from reality, memory work must be subsidiary, and imaginative work vary with the age of the child—much with the young and less with the elder pupils. Drawing should be taken alternately in line and dry colour in classes above the fourth. Brushwork always in water-colour.

Object Drawing.

In the expressive work from reality, every child from the kindergarten to highest class should produce the most full and complete expression possible, taking into consideration the age of the child and the medium being used, so that the colour of the object as it appears affected by the colour of the light, its shadows and reflections, must be expected from any child when the exercise is one in the truthful depiction of appearances. The examples here mentioned as suitable for each class are suggestions showing the gradations of difficulty. The flora of different localities, as well as the home life and daily occupations of the pupils and their parents, will supply numerous other forms worthy of being studied, and from these, teachers should have no difficulty in constructing programmes of work sufficiently graded, varied, and interesting.

It is essential that the main principles as specified for each class shall be thoroughly understood by each pupil before leaving that class, otherwise due progress will not be made in the class above.

The chief work of each class in object drawing may be covered by attention to the following, with irregular objects and natural specimens:—

Classes I and II—The direction and guidance of the pupils in their endeavours to freely express their impressions and thoughts of all things and to initiate them into the way of drawing in mass and line.
Class III—Proportions between the various parts of faces of objects.
Class IV—Objects involving the free perspective of level circles and rings.
Class V—Objects involving the free perspective of straight edges.
Class VI—A combination of III and IV in a group.
Class VII—Groups of three objects indoors, or one outdoor object, with its natural background.
Class VIII—Quantity similar to Class VI, with finer quality in colour, light, and shade.

Imaginative Work.

In every class imaginative work should be practised in connection with other subjects. In the Drawing lesson, however, there should be an endeavour to improve that free expression of other lessons. This can best be accomplished by appealing to the real thing after having drawn it from imagination, or by suggestion. No recipes for drawing should ever be given. In the imaginative work perfect freedom of expression must be allowed. Not only objects but the whole environment can be attempted.

When two or more pupils of the class are found with similar pictures or even with men or things done in the same way, the teacher will know that such work is not imaginative.

Free Exercises.

Some few minutes during each lesson should be given to free-line practice-work on a large scale almost at arm's length and at a fair speed, with continuous movement over the same line. Figures, letters, straight lines, and curves will all be found useful for this purpose—the aim being to compel the hand to obey the will, definitely and exactly.

Brushwork.

The teacher should make his best endeavours to develop artistic taste, a sense of beauty in design and colour schemes, and teach in the higher classes the elementary principles of design. Brushwork may be commenced with children of the age of seven years. The first three or four lessons should consist of brush-play. Afterwards there should be, regularly, brush-drawing (without the use of a lead-pencil) from a natural specimen as far as Class Five; with original designing introduced in Class Five and upwards, based upon natural specimens and their growth.

The use of lead-pencil and mathematical instruments is necessary in the designing. Whenever a tendency to be careless is found, a few minutes brush manipulation should be given of such nature as to counteract the force of that tendency. Colour is very important. In the nature drawing the colours must be accurately matched. In design, practice in forming new colour schemes must be given.

Modelling.

As with Drawing and Brushwork, so this must be done from reality, from memory or imagination, and original designs invented by the pupil.

The modelling from reality should be alternately from nature and objects. Designing is mainly for Classes Five and above, and should be in high or low relief for purposes such as wood-carving, stone-carving, repoussé leather, and metal.

Modelling from imagination is most useful when used in conjunction with lessons in other subjects, and as free expressive work is most valuable for the pupils of First Class age.

Examples suitable for the Classes.

First Class.

Free Expressive Drawing in dry colour on a surface of at least 18 in. x 18 in. for each pupil. The examples taken will be almost entirely subsidiary to other subjects. Development by practice, with suggestions and appeals to reality.

Free Expressive Modelling with improvement by suggestions and appeals to reality.

Second Class.

Drawing (in dry colour).—String of coloured beads, turnips, carrots, lemons, plums, cherries, pears, apples, bananas. All fruit to be afterwards drawn peeled, or cut.

Flowers like the cosmos, marguerite, geranium, lily, jonquil; objects as knife, spoon, button, wheel, kite, saw, axe.

Imaginative illustrations introducing people, animals, land, sea, and sky.

Modelling the objects of the Nature Studies, conversations, and other lessons. Things sold in shops (bakers, greengrocers, &c.), and implements used at home. Two-thirds of the Modelling lessons should be from reality, and one-third from imagination.

Third Class.

Drawing (in dry colour).—Objects such as boy's satchel, blade of a spade shovel, hoe, horseshoe, hats, bottles, tools like screwdriver, hammer.

The leaf of a Moreton Bay fig, canna, iris, coral, and eucalyptus.

Blossoms as violet, pansy. Vegetables and fruit.

Imaginative work.

Brushwork.—Simple small leaves, as bamboo, myrtle, grass, clover, weeds, eucalyptus, willow, dolichos. Blossoms.

Modelling.—Leaves as Moreton Bay fig. Berries and fruit. Objects in the round, toys, top, knife, small boxes, fruit, and vegetables from the object with one-sixth of the time devoted to modelling from imagination or memory.

Fourth Class.

Drawing (in dry colour and pencil).—Hats, brushes, links of a chain, hoop in any position, jar, flower-pot, bucket, boy's collar, feathers, Chinese lanterns, fans, ink-well, cup and saucer, vase, tea-pot, kettle, flour scoop.

Vegetables and fruit: Imaginative work in pencil or colour.

Leaf of the violet, convolvulus, arum lily, simple ivy, oak, and various trefoils.

Blossoms: Stock, wallflower, snowflake, rose, and sweet pea.

Brushwork from Nature.—Pepper and berries, cosmos, stock, boronia, snowflakes. Flat-tinting.

Modelling.—Leaves, blossoms, lily, berries, fruit and vegetables, in the round. Cup and saucer, pots, tobacco-pipe, hats, saucepans—always from an object within reach of each pupil.

Fifth Class.

Drawing in pencil; free perspective, objects such as boxes, books (standing, lying down, open, shut); a picture hanging tilted on the wall, upper corners of schoolroom and press, open door, tank. In colour, with shade and shine; Loaf of bread, portions of scholars' lunches, boots, hats (to show more advanced work than Class Four), teacher's bag, waste-paper basket: fruit and vegetables. Imaginative work.

Brushwork.—First lessons in design; the filling of spaces, and the knowledge of these principles,—repetition, alternation, symmetry, and radiation.

Plants of the following difficult foliage, blossom, and growth for use in design: geranium, marguerite, violets, boronias, sunflower, woodbine or honeysuckle.

Modelling.—Plants—pittosporum and berries, ivy, violet leaf and blossom, geranium, jonquil, daffodil, flannel-flower, camellia.

First lessons in design to fill spaces, and to receive instruction in these principles; repetition, alternation, symmetry, and radiation.

Sixth Class.

Drawing.—In pencil, free perspective, objects such as a portion of the school fence, steps, gas, or other lamp, row of telegraph posts, parts of school buildings (outside), board and easel, tray with cup and saucer, watering can, clock.

In colour (showing shade and shine): Tree or other outdoor object with the sky behind it; boots, draped flag, scholar's left hand (pointing, holding), bugle, drum and sticks. Fruit, of pineapple difficulty; vegetables, as a simple round cabbage, and imaginative work.

Brushwork.—Original designing, with a knowledge of colour scheming, grouping, subordination, balance, rhythm, to fill borders and set spaces, as for a book-cover, using such plant growth as nasturtium, rose, fruit-blossom, freesia, carnation, with butterflies and moths. One lesson should be sufficient for each nature drawing, but two at least should be allowed for each design.

Modelling.—Original designing, with a knowledge of grouping, subordination, rhythm, undercutting, and conventionalization, to fill set spaces and borders, using such plant growth as rose, loquat, fruit blossoms, foliage of the oak and ivy, beans and peas, maize, &c., grape-vine. One lesson for nature work, with two for designing.

Seventh and Eighth Classes.

Drawing.—Free drawing in pencil of objects involving free perspective, in colour, outdoor objects, including trees, land, sky, and water where possible, and simple groups of interesting objects such as plate, biscuit, and cup of tea, a vase of flowers, drapery, in colour only. The elements of drawing having already been mastered, the aim in Classes Six and Seven must be quality and artistic technique. Two or more lessons can be devoted to the one drawing. When colour is used it must be correct as seen, that means correct light and shadow tints and shades.

Design.—To complete the instruction in design in colour or modelling.

Boys.—The invention in colour or relief of original designs for certain purposes. Some to awaken interest in commercial goods, others to supply local needs. Interest in the designing of commercial goods can best be awakened by making comparisons between two or three different designs on manufactured materials then making an endeavour to invent something better from either a different or the same specimen. Linoleum, textiles, china, and wall-papers can be treated in this way. Adaptation of existing designs is not to be practised. To supply local needs the teacher should find from the manufacturers of furniture, tiles, leather goods, embossed steel or other, what are his needs from the artistic side. Exercises on their needs would be most valuable. There is always an open market for wood-carving, leather repoussé, cast plaster, stencilling, china-painting, &c.; and, as such work can be made by machinery, it will be readily understood that design is of primary value.

Girls.—The invention of original designs for articles for the home and personal adornment. To work out those passed by the teacher as being sufficiently simple, by any suitable processes as embroidery, appliqué, stencilling, china painting, leather repoussé.

Appreciation of Artistic Beauty.—Both boys and girls to receive lessons in appreciation of the beautiful in art, as picture study, architecture, ornament.

MUSIC.

First and Second Classes.

Aim.—Training of the Ear.—Correct method of breathing. Soft, sweet singing and careful pronunciation.

The sense of pitch to be cultivated by imitation of different tones, produced by the teacher's voice or the sounds of a musical instrument. Singing of simple melodies by ear, correct in pitch and time. Action songs to be taught and practised daily. Actions to be in strict time so as to be actual time exercises. Songs relating to the home and school life of the pupils. Marching songs to be practised when marching into and out of school. Singing must be soft, and correct time kept.

Voice-training.—Practice of "oo" sound on notes of varied pitch.

NOTE.—(1) Songs of suitable range to be chosen, say from C to E (or d to m^1); (2) the singing of a verse or two of a song at change of lessons is recommended. Pitch all songs fairly high, and insist upon soft singing.

Faults to avoid.—All shouting. A nasal tone. Bad pronunciation, especially upon the vowels "a" and "o."

Third Class.

Aim.—Soft singing, and cultivation of the "head" voice. Careful and correct pronunciation. Elementary knowledge of the modulator.

Training.

Breathing exercises (abdominal), and ear training exercises (see notes).

Scales.—Pitch from upper "me," or "fah," calling that sound "doh." Always sing scales downwards and up again (fairly fast) to one breath. Use both tonic sol-fa names and also the syllable "oo" (this latter cultivates the "head" voice by throwing the tone forward).

Modulator.—Intervals of a 2nd (up and down), intervals of a 3rd, and also exercises introducing the strong tones.

Time exercises.—Easy exercises to be given in 2, 3, and 4 pulse measure.

Songs.—Easy and tuneful songs (unison) and rounds. Use both the words of the song, and also the syllable "oo" to the melody of the song (the latter to produce a soft pleasing tone).

Theory.—Elementary knowledge of the modulator, and of pulse and measure.

Fourth Class.

Aim.—Soft singing.—Training of the "head" voice by frequent use of the syllable "oo," the "oo" tone to be aimed for when using words of a song. Also correct and clear pronunciation.

Scales.—Always downwards to "oo" or "o" and sol-fa. Pitch scale-practice from upper F or E♭. Call that sound "doh."

Modulator.—Commence upon upper "doh" and move up and down, using 2nds and 3rds, also the skip of an octave. Children to thoroughly understand the strong tones.

Time Exercises.—Use pulse, half-pulse, hold marks, and rests of a pulse value.

Songs.—Chiefly unison, but two-part songs are recommended as well, also rounds. Insist upon soft singing. Songs inculcating love of home and country should be used.

Theory.—Tonic sol-fa (as required for the exercises and songs above mentioned).

Fifth Class.

Aim.—Soft singing and use of the "head" voice. Clear and correct pronunciation. A good knowledge of the modulator.

Scales.—Always downwards (pitch from upper F or E♭ and call that sound "doh"). Use sol-fa names, also the syllable "oo"—this latter is very important, as it cultivates the "head" voice.

Modulator.—Commence upon upper "doh," and exercise voices to upper "fah," or even "soh." Train to lower "doh," but use the lower notes softly and with discretion, avoiding harshness. Intervals of 2nd, 3rd, 4th, and 8th to be used.

Tonic Sol-Fa Time Exercises.—2, 3, and 4 pulse measures; also introduce rests (pulse and half-pulse). Children to beat time with Teacher.

Elementary Staff Notation Theory.—Explain the staff, the G clef, also names and duration of notes and rests (semibreve to quaver inclusive).

Staff Time Exercises.—Easy, and in key of C. (Time exercises on one note, to be called "doh," and monotone exercises on vowel sounds oo-oh-ah recommended.)

Songs.—Unison, two-part, and rounds. Insist upon soft singing, and use both the words and the syllable "oo."

Sixth Class.

Aim—Soft singing.—The use of the "head" voice, clear and correct pronunciation. Use of the movable "doh," and a thorough knowledge of the modulator.

Scales.—Sing these always downwards and up again, pitch from upper F or E♭, calling that sound "doh." Use both sol-fa names and also the syllable "oo." A higher scale than F may be used if desired, but no lower scale than E♭

Modulator.—Intervals of a 2nd, 3rd, 4th, 5th, 6th, and 8th—practise to sol-fa names and to "oo." Always commence on upper "doh," and move up to high "soh" and down to lower "doh."

Staff Notation only—Time Exercises.—Both simple and compound, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{6}{8}$. All exercises to be sung to the same note, calling it "doh."

Sight-reading.—Exercises to be written in keys not having more than three sharps or three flats, using the "movable doh."

For more advanced work combined time and tune exercises in keys C, G, and F, of four bars duration may be used in $\frac{2}{4}$, $\frac{3}{4}$, and $\frac{4}{4}$ times; the class to beat time with teacher and to sing to sol-fa syllables or on the movable doh system.

Ear Training.—Write down brief phrases of a simple song from dictation; then re-write on the teacher singing the phrases slowly.

Songs.—Unison, two-part songs, and rounds.—Three-part songs (though not forbidden) are not recommended on account of the low compass of the third voice.

Soft singing to be insisted upon, with the lips well forward (but in a natural manner), and use the syllable "oo" as well as the words in a song.

Remarks.—Practice such vowel sounds as "oo," oh, ah. Use all low notes with great care (softly) to avoid harshness, and give special attention to the higher notes. The correct position of the body should be enforced. Care must be exercised in the choice of songs—(1) as to their range; (2) as to their words and sentiments.

Theory—Staff Notation only.—The staff, clefs (G C F), key and time signatures. Intervals (major and minor), notes and rests; also the words and signs of expression and of time in ordinary use.

Seventh and Eighth Classes.

Continue and extend the range of work done in Sixth Class. Teachers may consult also the course laid down for the first two years in High Schools.

NOTES.

Hints on Voice-Training.

Breathing.—For singing purposes it is necessary to take in, retain, and use the breath as the motive-power for producing the vocal sounds. The following simple exercise will be found of use:—Standing erect, place the hands upon the sides at the lower part of the ribs. Breathe in through the nose, and direct the air to that part covered by the hands, keeping the upper part of the chest steady. Exhale by monotoning or singing numbers up to 8, 12, or 16. The shoulders must not rise, but the chest will expand during the monotoning or singing. An old faulty method was to raise the chest and shoulders while inhaling and to allow them to drop while exhaling, as it were pumping out the breath. This last method should be carefully avoided.

Ear-training.—The foundation should be laid in the Infant School. Encourage children to imitate a sound softly, to "coo" or doh, beginning with fairly low notes, say, D, E, or F. Then a short phrase should be sung to "oo" or "coo," and imitated if possible individually or in twos, to accustom the child to gain confidence in its own voice and power. This is of the utmost importance. Most of the so-called "no ear" arises from want of confidence.

Scales.—Tuning-fork C gives up per doh. Proceed up to fah and call that the new "doh." Always use this key of F for scale practice. Commencing on the upper doh (note F) proceed down to the octave and up again, using only one breath. Use this exercise twice to "oo" or "coo" and then substitute the sol-fa words. Remember to keep the lips well forward in order to acquire he true "oo" tone, and, above all, sing softly and sweetly, holding back the breath as much as possible.

Modulator.—Commencing with children of the third class, always give modulator exercises from the upper doh, and use as much as possible the higher notes in order to encourage the development of the "head" voice. Insist upon soft, sweet singing, with lips well forward and teeth apart. Use both the sol-fa words and also the syllable "oo." The forward position of the lips is of the utmost importance to acquire that beautiful "oo" tone. which is so much admired.

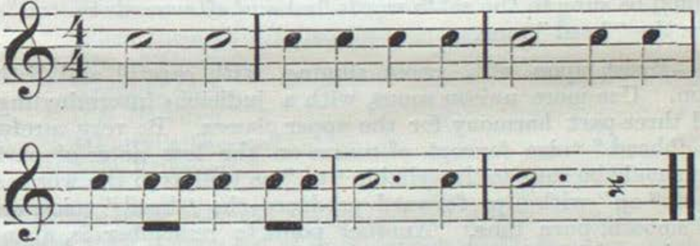
Pronunciation.—All vowel sounds are formed by the position and movement of the lips. In order to avoid a nasal tone all singing should be thrown towards the front of the mouth. The two vowels which require the chief attention are "o" and "a." To form oh correctly push the lips forward and have the teeth apart wide enough to admit the little finger. Sound "oh" slowly and you will notice that it has the effect of oh-oo, Dwell on the first half and finish the second half quickly. To form "a" correctly again keep the lips forward and you will observe the double sound a-ee. Dwell on the first half. If you master these two vowels the others seem comparatively easy. The chief thing to remember is the forward movement of the lips, and the dwelling upon the first half of the sound. The following very simple exercises, said slowly, will be found useful—

Oh go down (lips forward).
Oh a la-dy (lips forward).

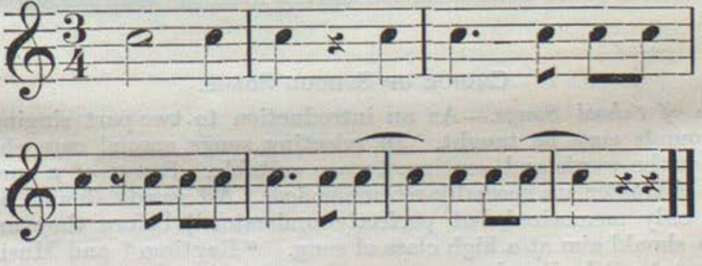
If in speech correct pronunciation is desirable, how much more necessary in song, where the words are more dwelt upon!

Time and Sight.—It is advisable to give time exercises separately, and it is usual to do so on one sound. These "doh-doh" exercises, as they are called, can be made more interesting and useful if the children are encouraged to beat the time with the teacher. Begin with two beats in a bar (down-up), then three beats in each bar (down-right-up), and lastly four beats (down-left-right-up). Two examples as models are given—the first easy and the second more advanced.

EASY.

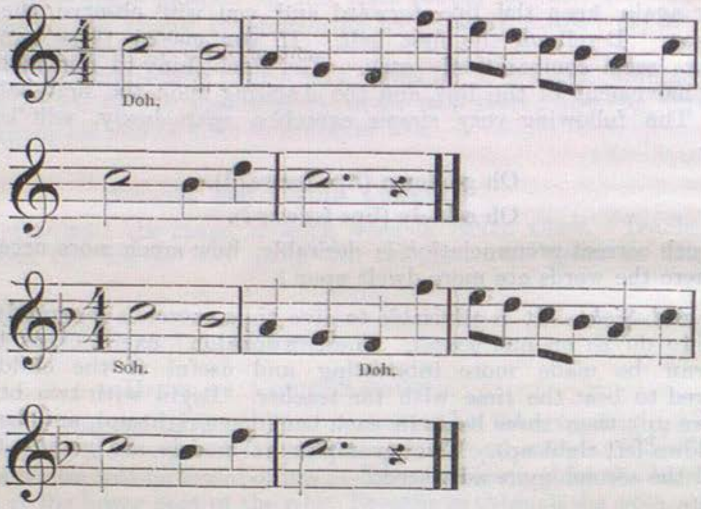


MORE ADVANCED.



Any pitch may be taken as "doh," but A or B♭ is recommended Insist upon soft singing and a carefully pronounced "oh" in the doh.

Sight-reading Exercises.—In the tonic sol-fa system the rules are so simple and straightforward that no "Hints" are required. In the staff notation system it is most advisable that reading-at-sight should be taught upon the "movable doh" method. If children are thoroughly acquainted with the modulator they should be able to pitch correctly any of the sol-fa intervals. Add this to the power of recognising the correct value of time to be given to each note according to its shape, and the whole plan becomes quite easy. The following examples will serve as models:—



These should be sung to the sol-fa words first and afterwards to "oo" in order to acquire the "head" tone.

Songs.—Insist upon soft, sweet singing, with careful and distinct pronunciation. Use more unison songs, with a judicious intermingling of two-part and three-part harmony for the upper classes. Be very careful to use only the "head" voice (except of course on the low notes of part songs). All songs should be sung to the syllable "oo" as well as to the words set. The free use of "oo" with lips forward produces the "head" voice, and also a beautiful smooth, pure tone. Another point to remember is, always pitch the songs in a fairly high key. If the upper part of the voice is well brought out the lower notes form themselves from the tone produced.

CHOICE OF SCHOOL SONGS.

Choice of School Songs.—As an introduction to two-part singing a few simple rounds may be taught. In selecting songs, special care should be taken that the words and sentiments are suitable. Songs of a moral and patriotic character are specially recommended. All words should be learnt (*i.e.*, not only memorized, but perfectly understood) before they are sung. Teachers should aim at a high class of song. "Ragtime" and Musical Hall Ballads must not be listed.

There is no desire to limit the teacher's choice, but the selections should be of an inspiring character, such as—

Hymns (example): "Lead Kindly Light"; "Abide with Me"; "Oh! Come all ye Faithful."

Carols (example): "The First Nowell"; "Good King Wenceslas"; "Like Silver Lamps."

Australian Songs (example): "Australians All"; "Advance Australia Fair"; and others of recognised merit.

The National Songs of the Allies: France, Russia, Belgium, Italy, Japan, and Servia.

Folk Songs and Melodies: Any old English, Scotch, Irish or Welsh Folk Songs and Melodies.

Miscellaneous.

Silcher's "Sixty Melodies for Youth."

Brahm's "Children's Songs."

Mozart's "Children at Play."

Also songs by Handel, Schubert, Schumann, Mendelssohn, Spohr, Beethoven, Wallace, Gounod, Sullivan, Wagner, &c. Many of these will be found in Novello's Classical Songs, vols. I and II.

At the end of the Primary Course children are expected to have learnt a certain repertoire of songs, amongst which the following should be included:—

"God Save the King."
"Home Sweet Home."
"Auld Lang Syne."
"Afton Water."
"The Last Rose of Summer."
"The Dear Little Shamrock."
"When through Life, Unblest we Rove."
"Men of Harlech."
"Heart of Oak."
"Tom Bowling."
"Admiral's Broom."
"Rule Britannia."

It is to be remembered that the power to read Music correctly is of much more importance than a long list of songs learnt chiefly by ear. At the same time, it is reasonable to expect that at least a new song will be mastered thoroughly each month by every class.

MANUAL TRAINING.

The course of work is divided into two sections :—

(1) "Central" course occupations, which provide for a definite progressive scheme of work.

(2) "Side" occupations, which provide optional exercises in busy-work to be taken up when the teachers are competent to give the instruction.

In the First and Second Classes attempts are made to encourage initiative and resource, whether it be in work or play. The child is regarded as a child, appealed to as a child, encouraged to use hand and brain together, brought into contact with a variety of materials in order to learn their nature and possibilities, and to express his ideas in them. Thus paper, wool, raffia—in fact, many things—may be used with which he can experiment and gain experience.

He thus gets perceptions of space-relations, weight, distance, colour, the fitness of certain things for certain purposes. The purpose of this training is not "skill" in the usual sense of the word. It is to lead children to express their own ideas, not in terms of adult experience, but in those of their own.

The objects made should be such as will interest the children, and the work should arise out of their desire to make them. If the objects made are not interesting to them, and are made at the order of the teacher because they "come next in the course," the work loses its chief value.

Most children will be interested in making toys, in reproducing objects they see around them, in illustrating stories, and in making things useful to themselves, or suitable to give as presents to others.

The teacher should choose the models from such objects, whether they be in the course or not. Paper modelling is a very suitable occupation for young children, and admits of easy correlation with the child's experience and with other lessons. Paper modelling includes paper twisting, tearing, free cutting, cutting outlines, poster work, modelling simple objects, and pasting the parts together. A number of articles, such as box, bed, table, chair, can easily be made by using a sixteen square ground form.

Group work may be given—for example, a number of pupils may construct a large model to illustrate a story, or the handwork may be grouped round some "centre of interest," *e.g.*, the home, a farm, or a railway station.

The exercises in weaving include work with strips of paper, raffia, yarn wool, and so on. Simple looms might be used for this work.

It is a good plan to have a small table, or a corner of the room, designated the "workshop," where may be kept in boxes all kinds of odds and ends of material, such as pieces of string, cane, cloth, wool, &c., to be used by the pupils in giving expression to their ideas.

In the upper class of the Infants' School, the children may occasionally make a model from the teacher's drawings. This involves a considerable amount of thought, but the pupils will take a pleasure in applying their ability to read the drawings. Later they may be asked to make similar drawings. Such work will give them practical acquaintance with the meaning and use of diagrams, and will pave the way for the work of a later stage.

The Handwork in the First and Second Classes is *expressional,* and no attempt should be made to give the child perfect mastery over any instrument or material. All the exercises must be *purposeful.* Just as every line in the child's symbolic picture drawing has a meaning, so all his first efforts at constructive work should be attempts to make things which are real to him.

When the child enters the Third Class he should be required to work more accurately.

Measured drawings should be made of objects that are to be constructed, and this plan drawing should be developed side by side with the constructive work through all the classes of the school. Handwork may be correlated with other subjects in the curriculum, (mathematics, geography, etc.), so far as is practicable.

It is essential that handwork should be developed in an orderly and systematic way. Hence the models in all the occupations should be carefully graded in difficulty, and the satisfactory doing of this or that exercise should be the educational reason for going on to the next. Progress and capacity are the qualifications for an advance.

The teacher should construct all the models he proposes to get the children to make, so that he may become thoroughly acquainted with every detail and difficulty.

In connection with paper and cardboard modelling, the teacher should, before every lesson, prepare a development of the model and also a complete model. The latter should be examined by the pupils for the purpose of discovering its development and ascertaining the shape and dimensions of the material required. The development may be pinned on the blackboard and the drawing built up from it.

The value of the work will depend upon how much the children observe for themselves, and not upon what the teacher tells them. If the teacher who sees that a child is not cutting properly merely talks to the pupil about his failure, and then takes the tool and does the cutting himself, the child receives little benefit.

There is much to be gained by having a great variety of exercises. If repetition be necessary, this should be obtained as far as possible by making an article which is somewhat different from the one already attempted, though it should not involve any fresh difficulty. In this way interest will be maintained and success be much more likely to reward the effort.

Planning should always precede construction. The drawings should be made in drawing books specially kept for the purpose. Drawing exercises should not consist of merely copying the teacher's drawing.

It is essential that this work should be neatly and carefully set out.

It is not intended that all the side occupations mentioned should be taken up in any school. They form optional courses.

The models set down in the different occupations are suggestive only, and any other models which involve the same operations in the same order of development may be substituted.

THE COURSE OF WORK.

First Class.

Stick-laying, ravelling or fraying, threading beads, &c. Wood-designing, paper-twisting, tearing and folding, card-sewing, mat-weaving, or other occupations.

Second Class.

Free-cutting in paper, illustrations for stories, nursery rhymes, &c. Outline cutting, poster work; weaving with paper, wool, raffia, &c.; card-sewing, sewing on canvas, &c.; toy-making, paper-modelling, or other approved occupations.

Third Class.

Modelling in Paper and thin Cardboard.

Developments embrace square, oblong, and triangle.

Suitable examples: (i.) *Flat.* Square mat, oblong mat, block letters L, H, W, F, Y, four-pointed star, Maltese cross, thread-winder, photo. frame, front of dog kennel, match-striker, notice card, picture post-card frame, candlestick, vase.

(ii.) Folded and Pasted Together.—Some of the models could be tied together with sylko. Objects: Such as wall pocket, folded photo. frame, paper bags, square tray, fire screen, square envelope, oblong envelope, pencil box, book cover, stamp case, pocket case, stool, settee, card case, sweets box, match holder, basket, box with lid attached, sentry box, kitchen dresser, barn.

SIDE OCCUPATION.

Raffia Work.—Raffia wound on cardboard foundations, also plaited work, the parts sewn together.

Suitable Objects.—Mats, boxes, frames, wall pockets, trinket case, belts, letter racks, &c.

Fourth Class.

Cardboard Modelling.

Models based on square, oblong, triangle, circle.

Some of the models to be constructed with flanges and others with butt joints, bound on the edges with paper.

Suitable examples: (i.) *Flat.* Triangles, circular, hexagonal, and octagonal mats, book-marks, quatrefoil, trefoil.

(ii.) Folded and Pasted together.—Trays of various shapes, with upright and sloping sides, *e.g.*, rectangular tray with sloping sides, triangular tray, hexagonal tray, &c., letter rack, picture frame, sliding pencil box, portfolio, extension wall pocket, match-box holder, money box, box problems, *e.g.*, rectangular box and lid, triangular box, hexagonal button box, fancy trinket box, hexagonal stool, a plant-pot cover, hanging wall box, stationery holder.

SIDE OCCUPATIONS.

Cane Weaving.—Mats of various shapes, introducing different kinds of weaving and borders, small baskets with upright and sloping sides, also with various shaped bases. Objects, such as single stick basket, card tray, fruit basket, small basket with handle, cotton basket;

Or,

Cord Work.—Knotting, splicing, binding, use of string, macramé, rope, &c., construction of bags, net, pockets, &c.

Fifth Class.

Cardboard Modelling.

Construction of objects in stout cardboard or strawboard, binding edges with bookbinder's cloth or paper. Some of the models could be covered with fancy paper.

Suitable Examples.—Blotting pad, draught board, cabinet photo. frame, lamp shade, letter holder, portfolio, trays of various shapes, vases, notepaper case, wall box, tea caddy, round button box, round pencil box, boxes of different shapes, an original box, wall bracket, inkstand, book coverings, box with partitions.

Geometrical Solids, cube, rectangular prism, tetrahedron, square pyramid, hexagonal prism.

Light Woodwork.

This work may be taken by boys instead of cardboard modelling, when a competent teacher is available. Models of the following type could be constructed:—String-winder, ladder, flower-pot stand, key-rack, square frame, paper-knife, photo easel, form, gate, swing, table, chair, garden seat, cart, wheelbarrow, crane, pile-driver, motor, lorry, locomotive.

(See illustrated course.)

SIDE OCCUPATIONS.

Cane Weaving.—Construction of objects, baskets with lids, baskets with handles, with wooden bases. Models, work basket, shopping basket, flower-basket, waste-paper basket;

Or,

Coiled Basketry.—Various weaves, lazy squaw, figure eight, simple coil, &c. Models, baskets of various shapes, baskets with handles, lids, &c. Coloured raffia may be used in the work.

Sixth Class.

Woodwork.

No.	Suggested Models.	Operations Involved.	Suggested Additional or Alternative Models.
1.	Pencil-sharpener.	Planing to width.	Rectangular prism or window stick.
2.	Seed-marker.	Use of chisel.	Key label.
3.	Octagonal teapot stand	Oblique sawing, planing.	Base for bill file, simple key-rack.
4.	Round copper stick.	Modelling with plane and file.	Plant dibble, boundary stick.
5.	Simple bracket.	Housing.	Matchbox-holder, tooth-brush rack.
6.	Cutting-board.	Curve sawing, use of spokeshave.	Pot-stand, bread-board.
7.	Flower-pot stand.	Nailing slabs.	Other stands, photo. easel.
8.	Brush board.	Simple inlaying.	Key rack, matchbox bracket.
9.	Egg-stand.	Boring, chamfering, screwing.	Chisel rack, pipe rack.
10.	Box with lid (not hinged).	Nail and butt jointing.	Nail-box.

SIDE OCCUPATIONS.

Light Metal Work.

A course in light metal work may be taken instead of wood work by the Sixth Class boys when the teacher is competent and proper materials and apparatus are available.

Materials.— Wire, strip iron, tin-plate, copper, &c.

Construction of models, *e.g.*:—

Wire.—Bill-file, toasting-fork, egg-lifter, soap-tray.

Strip-iron.—Mat, bracket, photo cases, bowl-mount.

Copper, &c.—Paper-knife, finger-plate, drawer-pull, photo-frame.

Some exercises in metal-work might be combined with woodwork, *e.g.*, bill-file with wooden base; candle-sconce, socket and tray of metal, mounted on wooden bracket; match-box, holder of metal on wooden back; inkstand, with metal pen-rack, &c.

One of the following occupations may be taken up by the *girls* in the Sixth Class:—

Wood Carving.

(a) Chip Carving.

Use of the carving knife or chisels, skew and firmer. Cutting out geometrical units, combination of these to form designs.

Decoration of articles, such as teapot stand, bracket, newspaper rack, inkstand, photo-frame, tray.

Or,

(b) Relief Carving.

The uses of the different chisels required in the work.

Carving units of design and simple forms, *e.g.*, scroll, rosette, shell form, &c.

Simple foliage and simple ornament. Finishing carvings with wax, &c.

Applications.—Panels, tops of tables, frames, chests, &c.

Pupils should invent their own designs.

Metal Work (Repoussé).

The use of the different tools required in the work, *e.g.*, punches, mallet, hammer, &c. The use of the pitch matrix and sandbag.

Methods of raising metal, cleaning and burnishing articles made. Construction of articles, *e.g.*, pen-tray, serviette ring, mats, finger plate, ash tray, match holder, candlestick, photo-frame, inkstand.

Leather Work.

Embossing, cut work, staining leather, sewing parts together.

Construction of objects, *e.g.*, card case, purse, book covers, bags.

Cardboard Modelling.

An advanced course in this work may be given to the pupils of the Sixth Class if facilities for carrying on woodwork do not exist.

Such a course would consist of:—

(1) Construction of geometrical solids.
(2) Construction of objects, *e.g.*, tag board, paper file, work-box, scrap-book, collar-box, handkerchief box, writing portfolio, inkstand, portfolio with flaps and tapes, letter-holder, album case.
(3) Elementary exercises in bookbinding, *e.g.*, rebound book, or bound magazines, music portfolio.

Bookbinders' cloth and fancy cover papers might be used in constructing these models.

Seventh and Eighth Classes.

Woodwork.

Exercises to be given in nailing, screwing, chiselling, gouging, modelling with file and spokeshave, curve-sawing, gluing, housing, lapped half jointing, simple mortise and tenon joints, mitre joint, simple dovetailed joints.

Construction of models to include the above exercises, *e.g.* :—Simple inkstand, soap box, bracket, towel roller, hat and coat rack, knife box, table mat, newspaper rack, Oxford frame, mitred frame, small stool, tea tray.

In rural schools models of the following types could be made instead of the above.

Hammer handle, axe handle, copper lid, milking stool, drill marker, tree protector, field gate, barn door, hen-coop, saw horse, ladder, wheelbarrow.

The models in the above courses are suggestive only. Teachers may substitute for those named other exercises of suitable type.

Boys should be encouraged to invent and construct original designs.

(See illustrated courses.)

Notes on the occupations in the Manual Training course.

Handwork for Classes 1 and 2.

The occupational exercises should, as a rule, be connected with the rest of the programme. There is probably no more valuable handwork for an Infants' School than that which is carried out with any sort of odd material; the object made being the child's choice, the materials used selected by himself, and the practical difficulties overcome by his own ingenuity. Freehand work of this kind should take an important place in the First and Second Classes. The individual character of the work, and the interest which the children take in it amply compensates for the crudity of its workmanship.

Although the freer methods of using handwork are probably the more valuable, it would be a loss if no provision were made for courses in handwork for children of 6 to 8 years of age.

Considerable advantages accrue from following the same occupation for a number of weeks. The child improves appreciably in skill and begins to learn to enjoy the acquirement of technique through practice. Experience gives him power over materials and suggests fresh ideas, especially if the decorative aspect of handwork receives careful attention.

Though this handwork may not be directly correlated with other subjects there should be a general harmony with the children's interests. The work in any one occupation should be graded according to the technical difficulties to be overcome. The programme of handwork will necessarily vary according to the surroundings of the children, but as a rule the child's home and immediate environment will form the starting point.

Paper Tearing.—This occupation is a valuable means of expression to children too young to use scissors. The paper used should not be too flimsy. Newspaper, lining paper, and several kinds of wrapping paper are suitable. Coloured papers may be used; they are satisfying to children and add brightness to the work.

Exercises might include tearing paper in strips, making tassels, tails for kites, common objects, *e.g.*, tree forms, leaves, vegetables, house, tent, umbrella, ship, &c.

Paper Cutting.—As the children show signs of developing some facility in shaping paper with their fingers they may be allowed to use small pairs of scissors with blunt points. Paper cutting includes free cutting and outline cutting. As far as possible objects of bold outline should be attempted first. Illustrations for stories may form a part of the paper cutting course. After a story has been read aloud, and the characters and events freely discussed by the class, each child may be encouraged to represent the part that has appealed to him.

After the cuttings have been made they could be mounted in a series—"to tell the whole story." Cutting out pictures from journals and catalogues and the making of charts, posters, and decorations for the room, are other useful forms of paper cutting.

Paper-folding and Construction Work.—When the children commence paper-modelling, simple, quick work may be done, illustrating talks and stories, by making models of houses, tents, tables, &c., which may be made by simply folding, without any cutting or fixing. These will be temporary in character, and from their simplicity will require the exercise of imagination.

The method of treatment needs to be varied. For example—after opportunity has been given for choice of material and free work, the child might be asked to work from simple models or descriptions, while an occasional exercise in working with the teacher may be necessary as a training in technique. Any kind of stiff paper, *e.g.*, cover paper or art-tinted papers could be used as material for this work. Scissors, rulers, and pencils will also be required. The parts of the models may be fixed with sylko, ribbons, &c., while paste is preferable to gum.

Weaving.—Mat-weaving is most interesting to young children, and cultivates the sense of colour as well as the training of the hand to nicety of touch. The mats constructed could be put to various uses, for making wall-pockets, book-covers, boxes, &c.

Loom-weaving.—Simple cardboard looms of different shapes, or wooden looms may be used for this work. A small wooden frame, with nails arranged in rows at each end, could be used as a simple loom. Adjustable looms are very convenient.

Various materials, *e.g.*, raffia, carpet warp, jute, knitting cotton, rug yarn, may be used. Many materials suited to weaving may be coloured in the schoolroom with easy dyes (cold water dyes.) Objects like iron-holders, mats, rugs, hammocks, curtains (for doll's house), doll's scarves, &c., could be constructed.

Raffia Work.—The raffia may be wound on cardboard foundations, plaited, knotted, or coiled and stitched. Many objects, such as mats, needlebooks, serviette rings, picture frames, etc., could be made.

Cane Weaving.—Simple baskets, doll's furniture, and toys may be constructed out of fine cane. The coarser varieties are too difficult for young children to manipulate.

Toy Making.—All kinds of odds and ends may be used in this work, *e.g.*, gas-mantle boxes, pieces of corrugated or plain cardboard, thin wood, string, wire, reels, tinfoil, corks, clothes pegs, buttons, &c. These materials could be collected by the children. It is not the result which is of importance in toy-making, it is the training which the child receives in the course of the exercise, and the satisfaction which he experiences in having made something for himself which it is possible to use.

It is neither necessary nor desirable that all the children in the class should be doing the same thing at the same time. Even though the whole class may be making similar toys there will be differences in them, dependent partly upon the individual child's tastes and ideas, and partly on the materials at his disposal.

Experiment with a definite aim should be encouraged, and the child should be allowed to find out as much as he can for himself as soon as he has made up his mind what he intends to make.

Objects of the following types might be constructed:—Dolls' carts, perambulators, swings, engines, horses, toy furniture, &c.

Threading Beads, Reeds, &c.—Beads of different shapes, round, oval, tubular, prism, may be used for this work. The beads could be threaded with fine wire, string, or cotton.

Simple patterns could be made, or objects constructed, such as teapot-stand, picture frame, napkin ring, bracelet, &c.

Card-sewing,—Sewing on burlap or large mess canvas, with thread, wool, raffia, &c., are useful forms of work.

Other suitable occupations include:—Stick-laying, rug-work, crocheting, knitting.

From the occupations mentioned teachers should select those suited to their particular requirements.

Paper Modelling.

Paper modelling for the Third Class should be conducted on similar lines to cardboard modelling. It forms a good introduction to the latter, and the two form a good preparation for the handwork in the highest classes.

The cutting instrument is the scissors, which the pupils have learned to use in the Infants' School.

Cover, manilla, and cartridge papers are suitable for the work, but if these are not available any other thick paper may be used. Thin cardboard may be used in later exercises. As an adhesive, paste is preferable to gum.

Some models may be tied with sylko, the necessary holes being made with a punch.

Cardboard Modelling.

Thin cardboard should be used at first, stouter cardboard and strawboard in the later exercises.

The range of objects that can be made is very large—from a simple rectangular mat to a well-finished and durable object, such as a work-box or cabinet.

Some models may be made with "flanges," in others "butt" joints may be used, and paper or bookbinder's cloth used to bind the edges. Models might be decorated with brushwork or with coloured or fancy papers.

The knife is the cutting instrument for this work, and it is advisable to work on a cutting board, which may be made of wood or zinc.

Cardboard work may be used to illustrate points in connection with arithmetic, mensuration, &c.

Simple methods of making suitable adhesives are as follows:—

Paste.—$\frac{1}{2}$ lb. flour, 1 oz. alum; boil in a cupful of water; add a few drops of oil of cloves.

Liquid Glue.—Soak some thin cake French or Russian glue in dilute acetic acid and render it liquid by gentle heat; then add one part of methylated spirit and a small quantity of alum; stir well. This solution should be kept in corked bottles.

Light Woodwork.

This work forms a good introduction to the woodwork in the sixth classes. Should benches be not available, it could be carried out on a work-board placed on the top of the ordinary desk.

Each boy requires only a few tools: small saw, knife, chisel, light hammer, bradawl, square. A few tools are also required for community use: brace and bits, a disc cutter, files, oilstone.

Soft timber should be used. It should be dressed and cut into the required widths before giving it to the pupils. Small articles, *e.g.*, photo-easel, table, cart, could be made.

Cane Weaving.

The material used for this work is known as rattan cane. It should be soaked in water before being used, in order to make it more pliable.

For young children, sizes 0, 1, 2, and 3 are recommended, the coarser varieties are rather difficult to manipulate.

Plaited straw and rush could be introduced in the work.

The articles made need not be of large size.

Raffia Work and Coiled Basketry.

The foundations for the wound work should be made out of cardboard.

For coiled and plaited work, needles are required to sew the parts together. Tapestry needles are suitable for this purpose.

The raffia may be coloured with dye.

Wood Carving.

(a) Chip Carving.

This work may be done with a chip carving knife or with chisels.

The pupils should first practise making various "cuts." These should not be too small. After proficiency has been gained in making different "cuts," the decoration of simple objects should be undertaken. The pupils should make their own designs.

(b) Relief Carving.

Practice should first be given in using different chisels. A beginning might be made by carving a single leaf or some unit of design. Later exercises would include the carving of foliage and simple ornament.

Designs should be made by the pupils themselves.

Metal Work (Repoussé).

This work may be carried out in pewter, brass, or copper. At first, practice should be given in using the different punches: tracers, pearls, &c.

Simple patterns may be formed by arranging tool marks in groups. After some practice has been given in using the different tools the decoration of simple objects could be undertaken.

Pupils should design their own patterns.

Leather Work.

Different kinds of leathers may be used in this work: ordinary Persian, velvet Persian, basil, calf skin, imitation morocco, cow hide.

The chief tools for this work are a pair of punch pliers, and a pointed tool called a tracing tool. A knitting needle inserted in a piece of wood, or a bone crochet-hook might be used for the latter.

The operations include cutting, embossing, staining, sewing. Pupils should make their own designs.

Woodwork.

The aim of this instruction is to provide a training for the hand and eye, with special regard to accuracy in observation and measurement, and to impart a knowledge of the principles of good construction. Accordingly, the bench work is arranged so as to take the form of graduated exercises, each successive exercise introducing a new tool, or a new mode of using the tools which have already been introduced in previous exercises.

Good workmanship and finish are of primary importance; the production of a large number of models of secondary importance. The suggested exercises provide for variety in design and construction.

Teachers should demonstrate the correct methods of using the different tools, and point out the dangers that arise from their misuse. They should endeavour to get the pupils to assume good healthy working postures.

From the moment a boy commences to use tools he should be taught to pay close attention to his working drawing, and every opportunity should be taken to show him the necessity for, and the advantages to be derived from, frequent comparison of the work with the drawing.

All tools should be properly cared for, and the tops of the benches should not be damaged. The room and all that pertains thereto should be arranged and kept neat and in order. There should be a definite place for everything, the pupils should know that place, and be taught to keep things in their places. During the lessons many tools are required; these should not be strewn about the benches in an irregular manner, but as each tool ceases to be required it should be returned to its place on the rack, or in the cupboard.

Tools and Timber.

Lessons of short duration should be given on tools—their construction and management. These should generally be given when the tools are to be first used.

A knowledge of the medium in which this work is carried out is essential to correct appreciation of the uses to which it is put, and to successful results. Some time should be given, during the course, to the study of timber and trees, and by judicious arrangement such work can be successfully accomplished with the minimum amount of time deducted from the instruction in actual handwork.

The names of the common woods should be known, and their properties studied in order to enable the pupils to recognize them, and discover the special purposes for which each is suitable. The methods of converting standing trees into a form capable of being manipulated by the wood-worker might be made the subject of several lessons.

Collections of timbers, leaves, &c., should be made by the pupils. Specimens of these might be mounted and displayed on the walls of the Manual Training rooms.

In connection with the study of tools, timber, and trees, it is advisable for the pupils to make written pictorial records. These should be entered in books kept for the purpose.

Drawing.

The inclusion of drawing in a Manual Training Course should have for its ultimate object something more than merely teaching a boy to draw. It should cultivate the habit of observation, teach him to think and reason, make him careful and accurate, and train his æsthetic faculty.

The greater part of the drawing employed in the Manual Training room is of the type known as mechanical, but it need not be confined to this branch.

In the early stages the drawing should be from a finished specimen of the object. Such a specimen should be exhibited and the boys questioned concerning the details and dimensions, the pupils being allowed to measure the different dimensions as the work proceeds. From the information thus gained the teacher should prepare rough sketches, marking in dimensions, and from these proceed to prepare a finished working drawing. Later, the pupils should take a model, analyse it for themselves, make their own rough working sketches, and then proceed to execute the finished drawing. All drawings should be neat and accurate as inaccurate or slovenly work is worthless. The cleanliness of books should receive special attention from the teacher. Pencils should have correct points, and rubbers should be used as little as possible. The pupils should be shown how to use the various drawing instruments required in the work. Most drawings in the Manual Training room consist of plans, elevations, and sections (if necessary).

The preparation of such drawings involves a knowledge of the principles of orthographic projection, but it is not advisable to enter into an elaborate explanation of these principles with beginners.

At the outset, pupils should be taught to prepare a picture or view of various surfaces of the particular model to be made, such pictures being sufficient to enable them to obtain an idea of the shape and arrangement of the various parts, and the dimensions of any portion of the work.

By the aid of hinged pieces of wood, made to represent the planes of projection, the pupils may be given an insight into the meaning and use of solid geometry. Exercises should be also given in isometric and oblique projection. The title and date should be entered on each drawing made. The pupil should keep a record of all work done. This should show the date of the commencement of each model, the timber used, marks given for the finished pieces of work, and for the drawings. Hard as well as soft timbers should be used in constructing models. The following timbers will be found suitable :—White beech, kauri pine, redwood, blackwood, maple, rosewood, cedar.

Light Metal Work.

This work includes simple processes, like bending, riveting, soldering, piercing with metal saw. The materials used are wire, Venetian or strip iron, tin-plate, copper. Simple tools only are required to carry on the work.

NEEDLEWORK.

Two Hours Weekly in each Class (Girls).

Third Class.

Demonstration, with Oral Instruction.—Use of needle, holding same, how to thread. Use of thimble, knot.

Hemming.—Commencing work, joining and fastening off threads, setting hems.

Practice in Sewing.—A strip of soft calico or linen hemmed with cotton of two colours, showing the join of the thread. Handkerchief, or doll's garment.

Knitting.—Manipulation of two bone or vulcanite knitting needles, How to hold same; how to hold wool. Casting on stitches.

Practice.—Simple washer in wool or cotton.

Fourth Class.

Demonstration, with Oral Instruction.—Running and felling, stitching, setting on buttons, setting on tapes for strings. Simple darning for thin places.

Practice.—Setting run or fell seams. Child's or doll's garment.

Knitting.—Two needles, purl and plain, casting-off. Dish-cloth, &c.

Fifth Class.

Demonstration, with Oral Instruction.—Sewing on buttons, hooks, eyes and patent fasteners. Making button-holes, loops and eyelet-holes. Sewing on strengthening tapes. Gathering, stroking and setting into band.

Practice.—Pinafore or small dress, or child's garment.

Knitting, or crochet woolwork.—Baby's singlet, skirt, or petticoat.

Sixth Class.

Demonstration, with Oral Instruction.—Methods of making seam, rims and fell. French seam, stitched seam, calico or print patch.

Darning a hole in stocking web material.

Cutting out in paper garments made in previous classes.

Practice—Underclothing.—Child's coat or dress.

Knitting or Crochet Woolwork.—Baby's bonnet, or child's cap, booties.

Seventh and Eighth Classes.

Demonstration, with Oral Instruction.—Hemmed seam, stitched seam, flannel seam, mantuamaker's seam, setting-in gusset. Flannel patch. Darning three-cornered tear in linen or dress material.

Practice.—Simple cotton blouse, skirt, simple house frock, apron.

Knitting.—Manipulation of four steel or vulcanite needles.

Practice.—Some useful garment, as Balaclava cap, socks, coat.

PHYSICAL EDUCATION.

"The Syllabus of Physical Exercises for Public Elementary Schools" issued by the Board of Education, London, is the Text Book for Physical Training. A study of the opening chapters and of the introductory exercises will supply full information as to the scope and range of the work. The principles and the details of each position and movement should be thoroughly understood.

"Infantry Training"—latest edition—published by the War Office is the Text Book for class order movements and disciplinary drill. Where the details in the above manuals differ in regard to any position obviously intended to be the same, the Military Text Book—"Infantry Training"—should be followed, due allowance, of course, being made for children as regards intervals, distances, length of pace, &c.

First and Second Classes.

Lower Section.—Kindergarten games, free exercises, action songs, deep-breathing.

Upper Section.—Position of attention, standing at ease, marching, games, free exercises, action songs, deep breathing.

Second Class.—Positions of attention, and stand at ease, dressing with intervals, right and left turn by numbers, marking time and marching, deep-breathing, rhythmic steps to musical time—vocal or instrumental. Games, introductory and simple free exercises, *vide* Chapter III, "Syllabus of Physical Exercises."

Third Class.

Drill—Boys.—Formation of a class in two ranks, dressing with half intervals, positions of attention and stand at ease, numbering in twos and proving, dressing with intervals and opening ranks, marking time, the turnings by numbers, saluting and reforming ranks, marching and dismissing a class.

Physical Training—Boys.—Introductory and simple free exercises with easy starting positions, *vide* Chapter III, "Syllabus of Physical Exercises," deep breathing, organized games.

Drill and Physical Training—Girls.—Same as for boys, but omitting saluting.

Fourth Class.

Drill—Boys.—Formation of class in two ranks, dressing with half intervals, numbering consecutively and proving in fours, the turnings—judging the time, marking time, saluting, dismissing a class, marching in line and in file and changing direction, changing step while marking time and marching, variations of step, dressing with intervals and opening ranks.

Physical Training—Boys.—Exercises as in Chapter III, "Syllabus of Physical Exercises" with progressive commencing positions of feet and arms, deep breathing, swimming, drill, organized games.

Drill and Physical Training—Girls.—As for boys, but omitting saluting

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Fifth Class.

Drill—Boys.—Squad Drill in two ranks, *vide* "Infantry Training," latest edition.

Physical Training—Boys.—Exercises as in Chapter III, "Syllabus of Physical Exercises," varied with advanced starting positions and combinations of exercises, *vide* pages 165–168, Appendix E. Deep breathing, organized games, swimming, and life-saving drill.

Drill—Girls.—Same as for Fourth Class.

Physical Training—Girls.—Same as for Fourth Class. Advanced starting positions and combinations of exercises, *vide* Appendix E., "Syllabus of Physical Exercises." Deep breathing, organized games, dancing and gymnastic steps, swimming, and life-saving drill.

Sixth Class.

Drill and Physical Training—Boys.—Same as for Fifth Class. *Girls.*—Same as for Fifth Class.

Seventh and Eighth Classes.

Drill—Boys.—Squad, Section, Platoon or Company Drill, *vide* "Infantry Training," latest edition.

Physical Training—Boys.—Same as for Fifth Class.

Drill and Physical Training—Girls.—Same as for Fifth Class.

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